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STORAGE

ANNALS OF GYNÆCOLOGY

A MONTHLY REVIEW

OF

GYNÆCOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY.

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OCTOBER, 1887.

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CONTENTS:

	PAGE		PAGE
PATHEMIA OF ERUGONE. <i>E. W. Cushing, M.D.</i>	1	EDITORIAL — International Medical Congress	32
LIVER TUBES. <i>W. H. Fale, M.D.</i>	11	Mann's System of Gynecology	33
EXTENSION OF UTERINE MYOMATA. <i>A. F. Carrier, M.D.</i>	21	Connecticut Medical Society	4
AVOIDANCE OF UTERINE CANCER. <i>T. E. Johnson, M.D.</i>	27	Hospital Reports	45

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Alcoholic Matter	1.97
Organic Matter	16.45
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Extract from Essay read before the American Medical Association at Richmond, Va., by G. R. Shepherd, of Hartford, Conn.:—

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Extract from letter in regard to Essay read before the American Medical Association at Washington, D.C., by B. N. Towle, M.D., of Boston:—

"GENTS,—In answer to your inquiry as to what form of Raw Food I used in obtaining the results reported in my paper read before the American Medical Association at Washington, D.C., I reply that I used several forms, but the one I relied upon was your Liquid Food.

"I am sure that a judicious use of your food will be the means of saving many valuable lives, and that no ethical sensitiveness as to the names of persons producing valuable combinations should deter me from stating the name of the preparations from which these results have been obtained.

"Respectfully yours,

B. N. TOWLE, M.D."





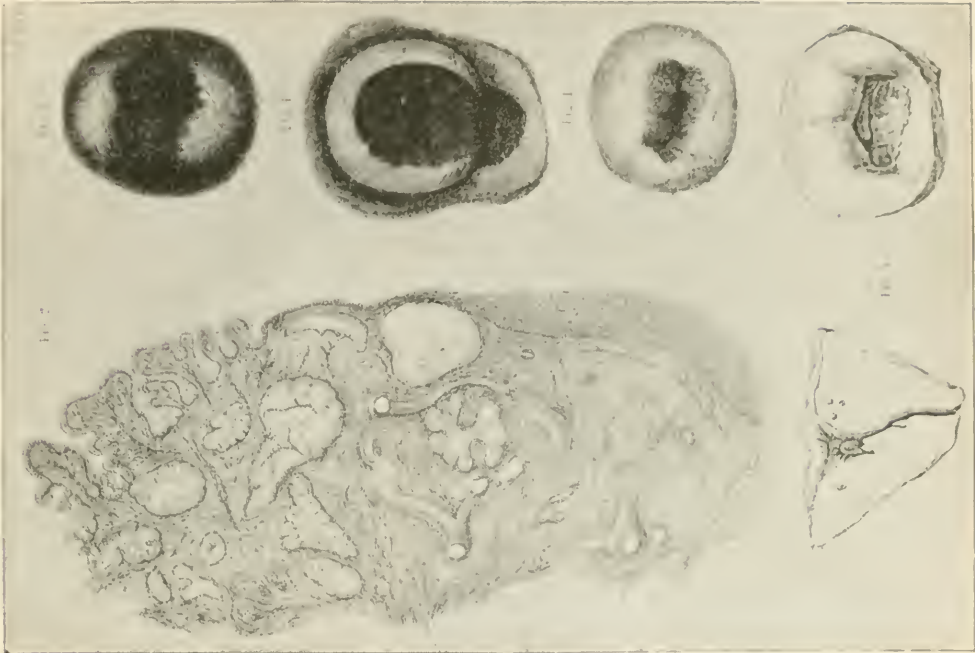


Fig. 1.



Fig. 2.



Fig. 3.





Fig. 4.



Fig. 6.



Fig. 5.



Fig. 7.



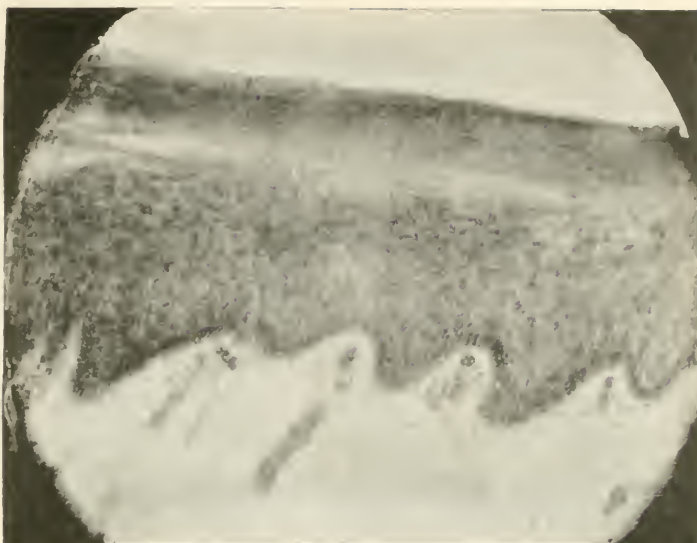


Fig. 8.

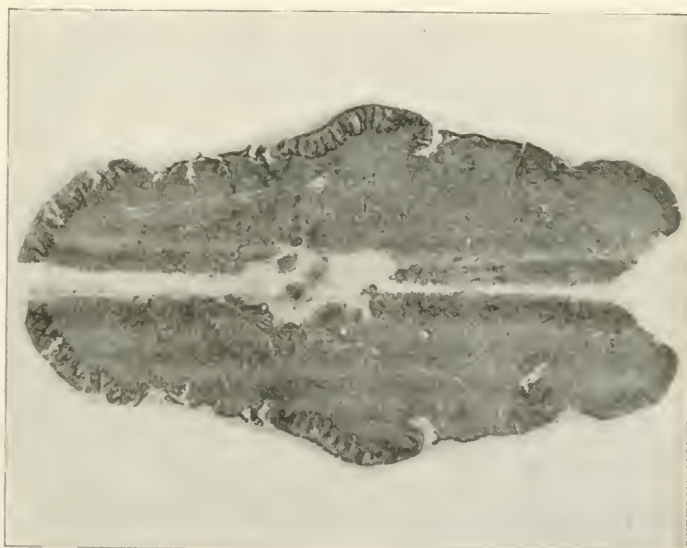


Fig. 9.

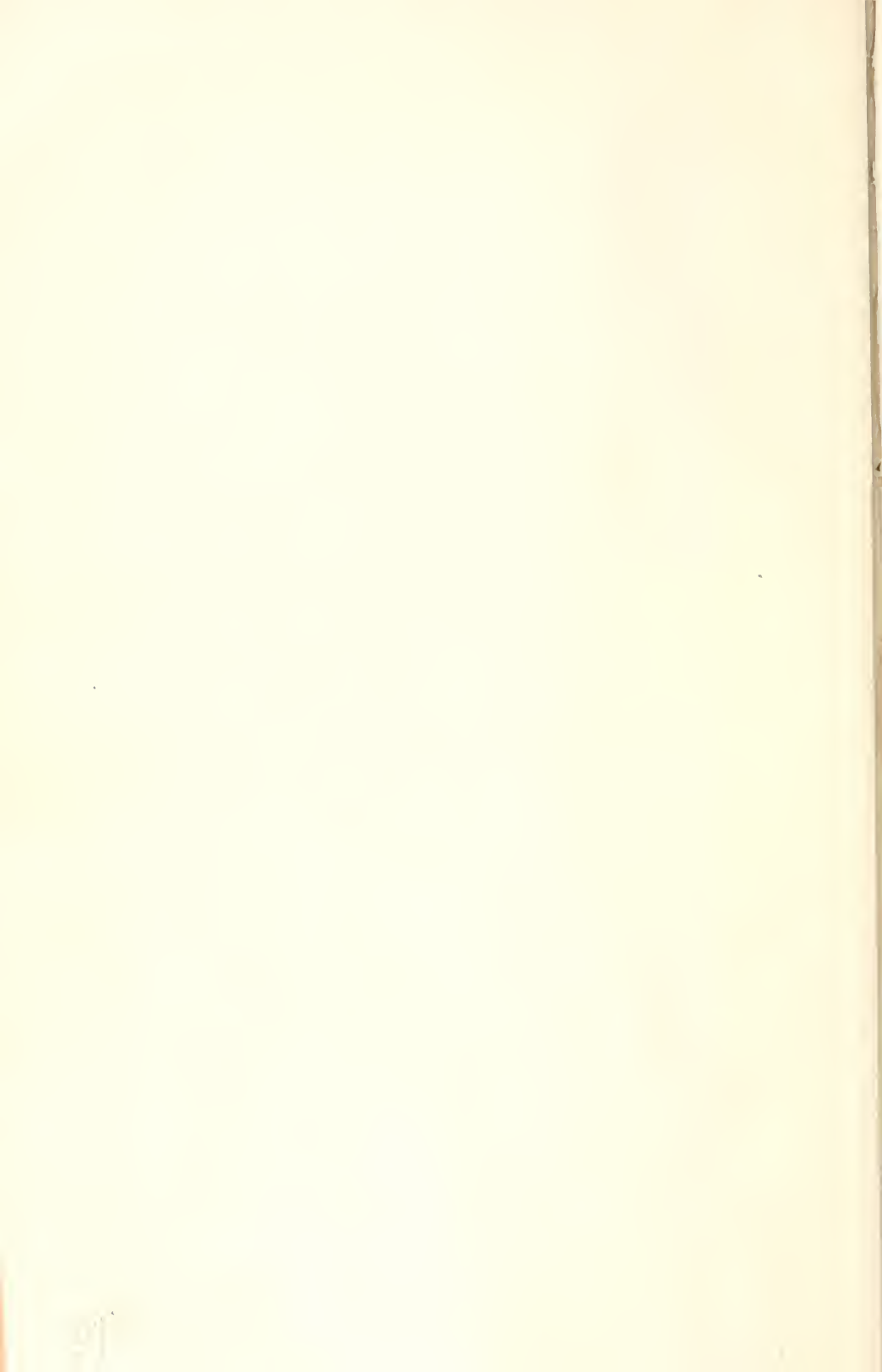




Fig. 10.



Fig. 11.



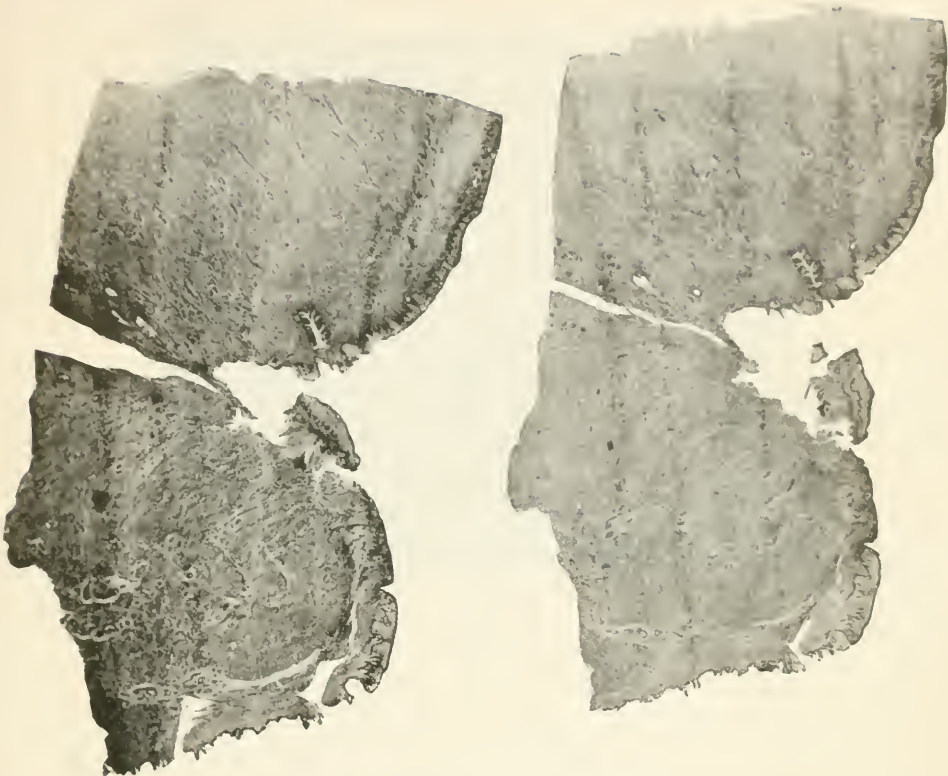


Fig. 12.

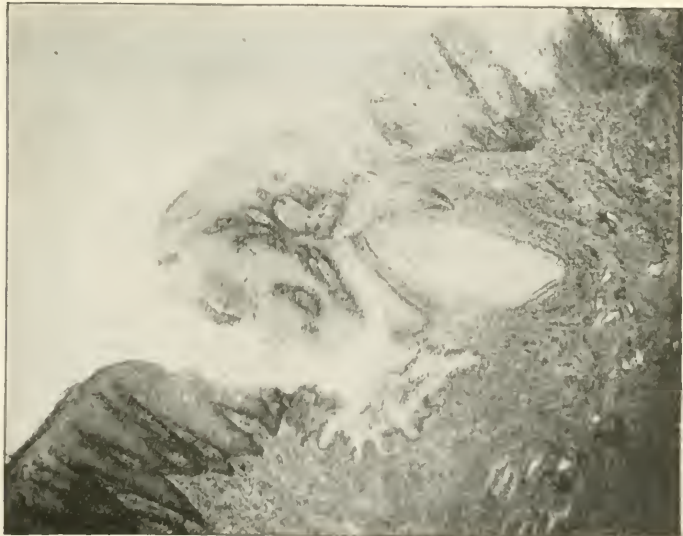


Fig. 13.



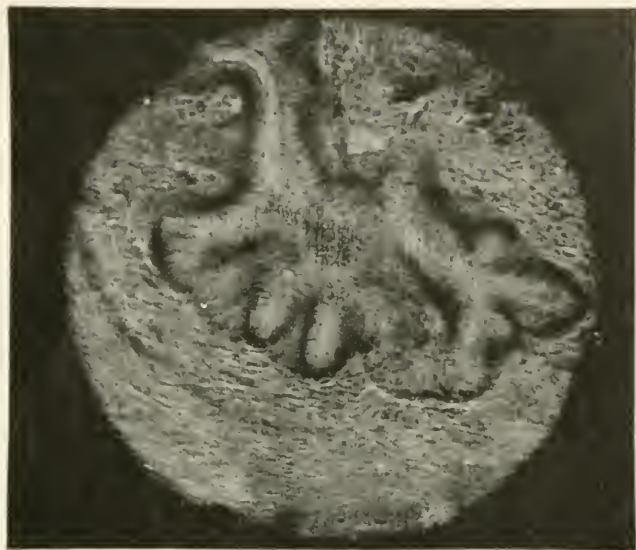


Fig. 14.

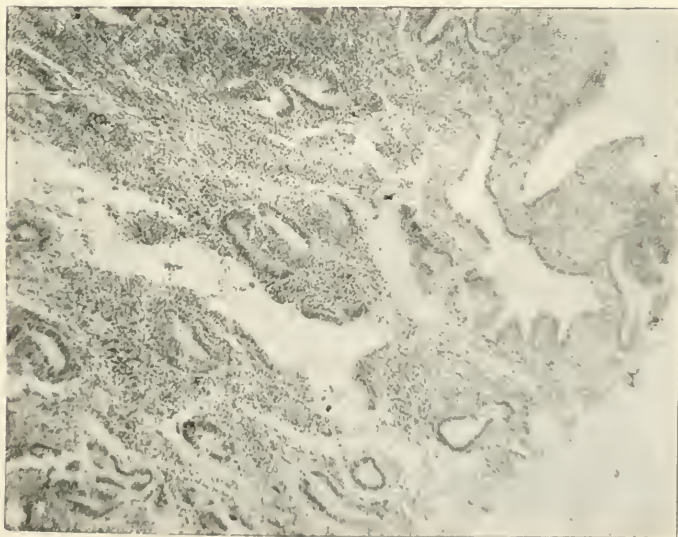


Fig. 15.





Fig. 16.



Fig. 17.



ANNALS OF GYNÆCOLOGY.

VOL. I.

OCTOBER, 1887.

NO. 1.

ON EROSIONS OF THE CERVIX UTERI, THEIR PATH- OLOGY AND TREATMENT.¹

Of all morbid conditions of the uterus none is more frequently met in practice than what is spoken of as erosion, or ulceration, of the os; and I take it for granted that most physicians are only too familiar with the gross appearances of such cases.

It may be well, however, briefly to recall the classifications of Tyler Smith, in England, and of Mayer, in Germany, as showing how much can be learned by ocular inspection through the speculum, and post mortem, without the assistance of careful microscopical work.

Tyler Smith's division is as follows:—

a.—Simple red ring.

b.—Erosion and partial exposure of the papillae, leaving them bare of epithelium, the secretion being mucous, not purulent.

c.—Superficial ulcerations with destruction of papillae, which he called granular condition of os uteri.

He also described, under the head of “cock’scomb granulation” what is now called ectropium.

Carl Mayer distinguishes

a.—Erosions and thickening of the lining of the cervical canal, which sometimes, though seldom, pass on to the outer surface of the vaginal portion, although by the thickening the lips are often everted, especially in women who have had children.

b.—Follicular excoriations and ulcerations of the cervical canal, with formation of cysts, which may ulcerate. With this form occur the mucous polyps.

c.—Papillary erosions, where the papillae, lying just under the

¹ Read before the Connecticut State Medical Society, May 25, 1887.

epithelium, are denuded, and are often stripped of the outer layers of their substance.

Emmet, in 1874, and afterwards insisted on the importance of ectropium, or eversion of the swollen mucous membrane of the cervix, with rolling asunder of the lips, showing what might readily be taken for an erosion but is not necessarily such, although, particularly when there is a laceration of the cervix, secondary alterations of the mucous membrane do occur.

Other writers have in general followed the above classifications, differing on some points, but, in the main, agreeing on what seems the most natural explanation of the appearances, viz.: that there is first a loss of epithelium, laying bare the papillae; that then the latter are destroyed, forming an ulcer; the condition, when occurring on the outside of the vaginal portion, was supposed to commence in the follicles.

There was great difference of opinion as to the nature of ectropium, while the ovula nabothi were considered as retention cysts of the pre-existing mucous glands.

In the photograph (Fig. 1)¹ from Ruge and Veit's work, is seen:

Fig. 1. — A simple erosion. — *Mayer*.

Fig. 2. — The minute anatomy of the same.

Fig. 3. — A follicular erosion. — *Mayer*.

Fig. 4. — An ectropium of the mucous membrane of the cervix. — *Emmet*.

Fig. 5. — A portion of the cervix amputated.

I will not stop to describe more minutely the gross appearances. The microscopic figures, however, are very characteristic, and explain the position taken by Ruge and Veit, that what are called erosions, ulcerations, etc., are various degrees of one process, which consists essentially in a new formation of glandular tissue on the surface of the vaginal portion, or in the cervical canal.

The glands are formed by a reduplication, or sinking inwards, of the lowest layer of the cells of the rete Malpighi, which are developed into a delicate cylindrical epithelium, which everywhere lines the glands as well as the parts between them. The latter, forming partitions, grow upward, while the glands grow downward; but still the projections thus formed are everywhere covered with a continuous layer of cylinder epithelium. The process goes on under the layer of flat epithelium which naturally covers the cervix, outside of the cervical canal; this layer is then lost,

¹ Zeitsch. für Geburtsh. u. Gynæk., Band ii, 1878. Martin's atlas. Hart and Barbour's Handbook of Gynecology.

undermined, as it were, but no proper erosion occurs; what was formerly considered as an erosion is a patch where the flat epithelium has been replaced by glandular formation; the so-called papillary form is where the partitions between the glands have grown upwards (not bare of all epithelium, however).

The follicles and cysts are not usually enlargements of preëxisting ducts, which have been occluded, but are new-formed glands without ducts. In ectropium there is essentially the same process going on in the cervical canal, and everting the lips.

The above-described active formation of glandular tissue may spread over the outer surface of the vaginal portion, where few, if any, glands normally exist. It may even extend to the vagina.

In exaggerated cases it resembles cancer so closely that the best experts cannot make a diagnosis without the aid of the microscope.

In a comparatively large number of cases cancers of the cervix are preceded by this condition of gland-formation, or, to state it otherwise, these so-called erosions when inveterate not infrequently become cancerous.

A pathological condition of this kind, where normal tissues are wholly supplanted by new-formed glands, is at best suspicious, and, considered pathologically, it is no wonder that it often serves as the starting-point of cancer.

The importance of these researches of Ruge and Veit, of which I have given a hasty summary, is so great, and their bearing on practical gynaecology is so obvious, that it is very strange that they have met with so little attention in America, although figured in the English edition of Martin's atlas, and in the work of Hart and Barbour. There is hardly an allusion to them in the text-books in the hands of the profession here, and until recently they were ignored by most of our leading gynaecologists in their writing. The original articles being thus inaccessible and neglected, I trust it may be interesting to consider some preparations which I have made while studying the diseased conditions of the cervix.

Before considering the latter, however, I will call attention to some pictures which I took from the living subject, as, although wanting in the diagrammatic instructiveness of the plate of Ruge and Veit, they show about what one can see in the speculum.

The first (Fig. 2) is a case of simple erosion of the cervix (after Mayer) in a virgin, who was for years a sufferer from dysmenorrhœa, having an antelexion. It is important as showing that these glandular hypertrophies, being encountered in virgins, and being of the same nature, as we shall presently see, with the morbid conditions occurring in laceration of the cervix, with ectropium, it follows that the latter condi-

tion is to be regarded not simply as a rolling asunder of the lips of a fissured cervix, as Emmet describes it, but as an eversion of the lips pushed apart by a glandular growth, which is the essential disease.

The next picture (Fig. 3) is from the cervix of a sterile married woman with chronic endometritis. A follicular ulceration, according to Mayer.

Here the glandular cysts can be seen as bright spots, reflecting the light from their convex surfaces.

The next picture (Fig. 4) is from a woman who had borne a child, then had a miscarriage, with subinvolution, metritis, and finally a high grade of induration of the cervix requiring excision of the glandular mass, which, in hardness and general appearance, closely resembled an incipient cancer, but was not of that nature. The tissues were crowded with cysts, extending on to the vaginal portion, and as there was no fissure, it was impossible to suppose that this new formation of glands was in any sense an eversion of the cervical mucous membrane.

The next case (Fig. 5) shows a badly ruptured perineum, with a fissure of the cervix on one side. The lips, as drawn down, do not show the eversion which they naturally had, but do show the edge of the red thickened mucous membrane, a mass of glandular new growths extending up into the cervical canal.

Fig. 6 shows an extreme condition where, after a double rent in the cervix with complete rupture of the perineum, the glandular hypertrophy was so excessive as to cause a great ectropium,—a red, secreting, fungous mass. The whole cervix was enlarged and could easily be drawn down by forceps, as seen in the cut, so that the os uteri presented externally.

There is, however, another form which the glandular hypertrophy may take. Instead of growing in the tissue of the cervix, the glands, in combination with connective tissue, abundant small cells and bloodvessels, may form polyps, or semidetached masses, which bleed easily and secrete abundantly, and thus exhaust the patient. Fig. 7 shows a lacerated os, containing two such polyps, which by continuous hæmorrhages had nearly exsanguinated the patient before she applied for relief.

In calling attention to the next figure, a micro-photograph, I desire to acknowledge my great obligation to Dr. M. Greely Parker, of Lowell, for his aid and instruction in the making of micro-photographs.

Figs. 8, 11, and 13 were taken by the light of a common petroleum lamp; and as, in this manner, without expensive apparatus, it is possible for physicians to record the results of their microscopic work, I hope that great benefit will result from a general use of this fascinating branch of pathological study.

I am also under obligations to Dr. W. W. Gannett, of Harvard University, for the facilities courteously afforded me in the laboratory of that institution when I made the sections from which the photographs were taken.

Fig. 8 represents one of my sections as photographed by Dr. Parker with Hartnack 7. The amplification on the plate is about 300. It shows the normal mucous membrane of the vaginal portion at the edge of the cervical canal. It resembles a section of skin, that is, there is a well-defined layer of flat epithelium, a lower layer of rounder cells reaching down between the small papillae, which come up at intervals, carrying the bloodvessels. Between the tissue of the papillae and the cells of the rete Malpighi you see a single layer of cylindrical cells, forming a continuous row like the lining of a gland.

I would call attention particularly to this, because it is from this layer, as Ruge and Veit discovered, that the glandular formation proceeds in cases of so-called erosion.

I cannot help thinking, however, that these authors overstate the case in considering all erosions as of glandular origin.

The next plate (Fig. 9) is an enlarged photograph of a section from a cervix which, microscopically, certainly appeared to be eroded, and yet there are no glands to be seen. Nevertheless, an inspection of the specimen shows that the principle is the same, for you see that the cells of the rete Malpighi are in very active proliferation, and form processes which are growing downward, while, at the same time, the papillae lying between them are longer, so that the surface is actually raised. Between the patches of rapidly enlarging pouches of epithelium are places where the surface is depressed and flat, and there are no signs of papillae nor any distinct layer of flat epithelium.

The contrast between the patches where thickening has occurred, as above described, and the intervening depressed flat places, is so great that the surface would readily be classed as eroded, and yet in no place is the epithelial covering wholly lost, although the flat epithelium has disappeared in many places.

The next plate (Fig. 10) is from a micro-photograph (of 50 diameters) of the pouches of proliferating epithelium surrounding the long and slender papillae, which here reach nearly or quite to the surface. The thickness of the epithelial layer is at least six times that of the normal layer (*vide* Fig. 8). Each papilla is clothed with a layer of cylindrical cells, more or less distinct, and, of course, thus the lining of the glandular pouches is the same layer as the investment of the papillary septa.

This continuous layer is preserved in all cases of "erosion," and it

is precisely the breaking through of this layer of cylindrical epithelium by the cells contained in the pouches which, in constituting a real ulcer, also implies a cancerous invasion.

Fig. 11 is a photograph, 100 x, of the depressed flat part, which shows, in the submucous portion, a great abundance of round cells sprinkled through the stroma, no papillae, and a total loss of the layer of flat epithelium, which can be seen at one end tapering away. The layer which represents the mucous membrane is a mass of rapidly proliferating cells of the rete Malpighi, which take the color readily, and evidently clothe the subjacent stroma, in lieu of a better mucous membrane. I see no reason why this is not a fair example of a simple erosion, although Ruge and Veit apparently do not admit the existence of such a condition.

There is no sign of new formation of glands such as I will show you presently.

Possibly in these cases medical treatment had brought about a cessation of the morbid process and an attempt at healing with hypertrophy of the connective tissue. Yet the fact remains that, in what, after death, on examination, by the naked eye, by myself, and by others well qualified to judge, were considered as specimens of slight erosions of the cervix there was no such granular formation as Ruge and Veit describe, but only what seemed to be a subsequent stage. I mention this because our ideas on the pathology of the condition of erosion are bound to have an important influence on our treatment, as I shall hereafter show.

The next plate (Fig. 12) shows two sections from an eroded cervix. In the first the cervical canal is included, and the other section is slightly more lateral. You observe the epithelium of the lips very much thickened, with long thin papillae, as in the other specimens already shown; but nearer the os the flat epithelium is lost, and there is an evident erosion. You also see between the lips a section of a small polyp, or mass of mucous membrane which, in the original specimen, was pear-shaped and rather loosely attached. On the left is a large gland in process of development to form a cyst or ovulum nabothi. In some places the whole epithelial layer seems ready to separate, and at one side it is lost, leaving the papillae bare, as described by the early authors. This, however, is a post-mortem change due to maceration, while the manner in which the epithelium is lost during life is by an undermining of its attachment by a growth of glands, such as can readily be detected here in many places with a microscope.

The next plate (Fig. 13) shows such a spot in one of the preceding sections magnified three hundred times, as photographed by Dr. Parker.

The enlarged papillae are seen at one side, rising up through masses

of swollen flat epithelium ; — everywhere, however, clothing the papillae, and separating them from their covering, can be traced the layer of cylinder epithelium to which I particularly called your attention in showing the first micro-photograph. Gradually, however, this layer becomes flat, and then dips down and is reduplicated, forming a granular space, and it is easy to see that the masses of flat epithelium above are thus sundered from their resting-place, and ready to fall away, leaving, as the process spreads, a red, raw-looking secreting surface depressed below the immediate border of thickened papillae, in fact a so-called erosion.

Fig. 14 shows such a gland which has pushed its way deep into the muscular tissue of the cervix, where, normally, no such gland should occur. This plate shows that, in speaking of glands, one does not refer to any mere folds of mucous membrane, but to a typical acinous structure.

Fig. 15 shows the arrangement of the glandular spaces in a mucous or glandular polyp. Here, however, the process is somewhat different, for instead of a loss of the flat epithelium of the cervix and a substitution for it of the glandular hypertrophy, in the mucous polyp there is an exaggeration of the conditions obtaining in the mucous membrane of the cervix. The small points in Fig. 15 dotting everywhere the interglandular spaces are the nuclei of rapidly proliferating small cells, which fill the tissue of the polyp and contribute to its rapid growth, while the large capillaries account for the tendency to hæmorrhage.

The specimen from which this section was made was plucked with forceps from the patulous cervix of a young lady of sixteen years, who had had a considerable hæmorrhage, and had passed a mass from the vagina, probably a blood-clot. A consulting physician suspected an abortion, and brought me the specimen for examination, thinking it was part of a placenta. The result of my examination, which showed that it was simply a thickened bit of mucous membrane with hypertrophy of the glands, restored tranquillity to a distinguished family.

In bad cases the process represented by Fig. 13 does not stop at the surface, but goes on, as previously described, until the whole mucous membrane is a thickened mass of glands, filled with cysts. In cases where there is any rent in the cervix the swollen mucous membrane pushes the lips apart, forming secondarily the ectropium described by Emmet.

I think, however, if I understand Emmet aright, that he errs in considering the eversion as directly a consequence of the laceration of the cervix ; in fact, as only an exposure to sight of a not very abnormal cervical mucous membrane. As I understand it the process is just the opposite, *i.e.*, the mucous membrane becomes diseased from some cause not at

present fully understood. Personally, I believe that the "irritation" is due to some form of bacterial growth.

Where there is a laceration, of course the cervical canal is more accessible, and more ready to take on disease; but without lacerations, and even in virgins, as previously shown, the same glandular endometritis goes on. Where there is no laceration the growth is more compressed, and spreads more or less evenly in a ring round the os uteri, actually supplanting the flat epithelium normally clothing the vaginal portion. The existence of a laceration permits of an eversion of the swollen lips, and thus secondarily adds to the irritation.

But, even in these cases, the whole surface of the erosion is usually not everted cervical mucous membranes, as it is frequently represented to be, and as I understand Emmet to regard it. On the contrary, the process of glandular growth and cystic degeneration spreads beyond the boundary where the flat epithelium should commence. The everted lip of the lacerated os is thickened and elongated, by being actually stuffed with the degenerate glands (*vide* Fig. 6), and these may really spread to the vaginal surface of the cervix and even to the vagina.

It becomes a very nice question to determine whether such a cervix is cancerous or not, for the simple reason that in some cases the diagnosis cannot be made without a microscope, and it has frequently happened that cervixes have been amputated as cancerous which were only in glandular degeneration; and, on the other hand, that after a laborious treatment of an eversion or ulceration, it has been found to be malignant.

This fact has an important bearing on treatment, for if it is a fact that an everted and glandular cervix is more liable than a healthy one to become cancerous, it is plain that it must be radically healed as soon as possible, even at the trouble and inconvenience of surgical measures. If, on the other hand, it is a pure coincidence that some eroded and ectropic cervixes become cancerous, and, if we should believe that they would have become so even if not previously diseased, the indications for heroic or surgical treatment are not nearly so strong. The question is a very difficult one, and there is a great difference of opinion on it among physicians. I think that I am safe in saying that where there are the greatest opportunities for observation, and where the habit of early removal of portions of suspected tissue, and of careful microscopic study, of such specimens prevails, there is a consensus of opinion that a condition of laceration, eversion, and glandular or cystic degeneration of the cervix, predisposes very decidedly to cancer, under which name I mean to include epithelioma.

Not to go further into this question here, I will refer to the decided statements in support of this view made by Dr. Reamy, the President of

the American Gynæcological Association at the meeting of that body in 1886. I believe that the members present did not dissent from nor oppose Dr. Reamy's statement of opinion on this subject.

The results of American clinical observation thus appear to support the doctrines taught in Germany, which are the result not only of the study of a vast number of cases, but of careful pathological investigations, all emphasizing the fact that diseased cervixes are more liable to cancer than sound ones.

A little reflection will show how natural this is, when we realize how narrow is the line which separates the heterologous glandular development invading new tissues, with its immense reduplication and proliferation of epithelium external to the continuous basement membrane of the glands, from a cancerous degeneration, where the cells, breaking through into the lumen of the glands, grow inward, forming solid plugs or processes instead of hollow tubes or acini. The subject is of great interest, and I hope at some future time to speak further on it, showing preparations and photographs of the transition of glandular "erosions" into cancer, which will, I am sure, impress others as they have impressed me with the importance of curing the preliminary disease as thoroughly and radically and quickly as possible.

TREATMENT.

In the matter of treatment of erosions, everything depends on the condition of the uterus; for the erosions are merely to be considered as a symptom of a glandular endometritis, which has become visible, either by spreading beyond the normal limit of the cervical columnar epithelium on to the portio vaginales, or by everting a more or less patulous or lacerated os; thus in either case coming into the field of view, particularly when a bivalve speculum is used.

For convenience it is well to divide the cases into —.

(a.) Those of so-called simple erosions in virgins or nulliparae, associated with antelexion of the uterus, or with stenosis of the os, or with elongation of the cervix, or with various combinations of these conditions, in most cases causing dysmenorrhœa.

(b.) Erosions and endometritis of moderate degree, with subinvolution, following parturition.

(c.) Erosions with ectropium, as complications of a lacerated cervix. In either of the last two classes there may be a more or less complete rupture of the perineum; in any case, there may be parametritis, pelvic peritonitis, salpingitis, adhesions, etc.

(*d.*) Inveterate cases with induration of cervix, and suspicion of commencing malignant degeneration.

I believe that nearly all cases will fall into one or the other of the above categories, and I believe that, except in the second class, and provided there is no inflammatory trouble in the parametrium, by far the most satisfactory results are to be obtained by surgical measures.

For the first class of cases, those of erosions in cases of ante flexion, the last being usually congenital, or a survival of the infantile form, aggravated by repeated menstrual congestions, there are three modes of treatment, viz.: *First.*—The medical, comprising douches, dilatations, tampons with medicated glycerine, or boro-glyceride, intra-uterine applications, etc. This has been admirably elaborated and described by my friend, Prof. Wylie, and in many cases, with care and persistence, it is effectual.

However, it is a rather serious matter to condemn a virgin to a long course of local treatment, and with the best of care it often fails to give satisfactory results, even in sterile married women, where ethical objections have less weight. This treatment, however skillfully applied, is, I believe, usually inferior to surgical interference.

Second.—Slitting the cervix, at one time in vogue, and lately recommended, may have its place in certain intractable cases, where the cervix is extremely hard, but such cervices must be very rare, except as complicated with a state of hypertrophy, better cured by partial amputation, *i.e.*, of the excess of tissue.

Third.—For the vast majority of such cases, in fact for all but exceptional ones, and particularly where there is endometritis and stenosis of the os, it is much better to advise an operation at once; for, if properly done, with complete antiseptic precautions, there is no danger, there is little subsequent discomfort, and a speedy and satisfactory cure.

The patient is etherized, the vagina well washed with sublimate solution 1 : 2000, the cervical canal well disinfected with a stronger solution of the same on an applicator, the os dilated with Goodell's strong dilator, or Wylie's modified Sims' dilator, the diseased mucous membrane scraped out with a Sims or a Martin-Recamier curette or a sharp spoon, removing thoroughly the glandular hypertrophy.

Injection of iron solution is not necessary, although advised by many.

If there is hypertrophy of the cervix it is to be removed, or if there is ante flexion a stem pessary, well disinfected, and rubbed with iodoform, is to be introduced into the uterus, after the latter has been carefully washed out with the sublimate solution.

Some iodoform-wool is placed against the end of the stem to retain it, and remains there for two or three days.

The patient keeps the bed for a week, and then the stem is removed with antiseptic precautions. In a few days more she may get up, and the suffering and trouble are usually found to be cured; the erosions, naturally, are gone. Seldom is after-treatment necessary.

Such a case with such a result is represented by the photograph Fig. 2, and I could report a series of similar cases with equally satisfactory results, operated on by Dr. Marcy and myself.

I suppose that it is hardly necessary to insist here on the fact that neither this nor any other operation on the cervix is to be undertaken while there are acute inflammatory processes going on in the uterus or the parametrium. Emmet has sufficiently pointed out the necessity of removing all inflammation by rest, hot douches, tampons, etc.

With our present knowledge of the frequency of salpingitis, and of the bacterial excitors of inflammation, we can understand better than formerly the reasons why these precautions are necessary, and how often the whole focus of inflammation can be removed in the form of a diseased fallopian tube. For cases of stenosis with elongation of the cervix, erosions, and endometritis, mere dilatation is often not sufficient, and it is desirable to remove a portion of the hypertrophic tissue, and at the same time to restore the proper shape to the cervical canal and os externum.

It is not my present purpose to enter into the question of the choice of operations; the habit and skill of each surgeon may accomplish a good result in various ways.

The next class of cases is where, after parturition, although there is little laceration of the cervix, the uterus remains subinvolved, with endometritis and erosions.

I believe that in these cases the subinvolution is caused by the endometritis and not *vice versa*, *i.e.*, they are the results of a mild sepsis, or bacterial infection; and precisely these cases, when not too inveterate, are susceptible of cure by antiseptics, such as nitrate of silver, tincture of iodine, or strong carbolic acid; of these the latter applied thoroughly, on a cotton-holder, is the most effective. Of course, hot douches, and ergot, strychnia, etc., are also indicated, with vaginal tampons of glycerine 14, alum 1, boroglyceride 1, as recommended by Wylie.

Even in old cases, where the uterus is enlarged and hardened, much good can be accomplished by this sort of treatment, but the results are not usually very satisfactory; and in the next class of cases, where there is cervical laceration, the indications for surgical interference are even more imperative.

Nevertheless, where want of courage, or opportunity, on the part of the patient, or a want of faith in surgical measures on the part of the physician, exclude operative interference, the patient can be made comfortable, and with patience, sometimes, apparently cured without operation. Some women have such a horror of a knife that they will go about all their lives with a lacerated cervix and ruptured perineum, never being quite well, and requiring more or less perpetual treatment, rather than undergo an operation. This state of mind is not confined to women; in fact I think they are braver than men, who, when they have haemorrhoids, or hernia, hydrocele, or spermatocele, are notoriously unwilling to undergo any radical operation, but find that their "business" requires it to be perpetually postponed to a more convenient season.

For such women much can be accomplished, even in cases of ectropium, by puncturing the cysts, scraping off as much of the glandular structure as is possible under the influence of cocaine, and applying at intervals strong carbolic acid to the diseased mucous membrane.

The dry treatment as used by Dr. Engelman is very effective in healing the erosions, and promoting involution of the everted lips.

He dusts the parts with iodoform, and packs against the erosions balls of iodoform-cotton wool, about an inch in diameter, each of which balls is enclosed in a thin layer of styptic iron-cotton. This remains in place for two or three days, when it is removed and a new dressing applied.

Under this treatment, without douches or glycerine tampons, the erosions heal, the glands diminish, and the everted lips come together. Dr. Engelman was kind enough to show me several such cases in St. Louis, and it struck me as a very nice, clean, and effective treatment.

Apostoli, of Paris, who has been kind enough to send me his pamphlet, uses a constant current of electricity, with one pole in the uterus, and with a large pad of fuller's earth for the other pole on the abdomen; by this means *a current of high tensile strength can be used without much pain*, which effectually arrests the glandular development in the endometrium, causing an eschar, and thus in Apostoli's opinion, answers the purpose of a curetting.

Where there is not much laceration of the cervix, nor rupture of the perineum, these various measures answer very well for patients who have a fear of operative measures, and have a skillful and persevering physician.

Nevertheless, it seems to me more scientific and satisfactory to give the patient ether, scrape out the uterus after thorough disinfection, remove the glandular hypertrophy at once, repair the lacerations, make a good os, covered with flat epithelium, and thus cure the patient.

At the same time, if, as is very frequently the case, there is a rupture of the perineum, possibly complicated with cystocele or rectocele, the perineum can be repaired, and the appropriate colporrhaphy performed, to remedy the other lesion.

With little pain, and no fever, the patient thus gets in an hour a benefit which she can seldom receive in years of local medical treatment.

How much more, then, in cases where there is any symptom of malignant degeneration of the erosions, is it the plain duty of the attendant physician to recommend thorough removal of the suspected tissues?

The consensus of authority all over the world asserts that inveterate cervical erosions are peculiarly liable to cancerous degeneration.

I hope that the foregoing figures have made it clear that these so-called erosions are not in any sense losses of substance, caused by mechanical irritation, etc., but that they are an active new formation of glands, prone to recur, even when removed, readily invading the portio vaginalis, where it should be covered by flat epithelium, and thus, by all analogy of pathology, they are to be viewed with suspicion, and removed with thoroughness.

Every one who is in a position to see many cases of cancer of the cervix knows that it is the saddest part of his mournful duty to tell the patient that it is "too late to remove it all," and in no one thing is a greater advance in practice to be hoped for than in the early recognition and removal of whatever seems either malignant, or doubtful, or so inveterate as to be likely to be an early stage of that most dreaded of all the ills to which the sex is subject, viz., a cancer of the womb.

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LITHOPÆDION. — A HISTORY OF A CASE, WITH NOTES
OF ELEVEN OTHERS.

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THE term Lithopædion — stone child, literally — seems to be involved in more or less confusion. We even find a reference made to Dr. Lithopædion. But, bearing evidence rather of ignorance than mistake, are references to cases which are doubtless ones of mummified fœtus, or adipoceros formation, and not lithopædion. The latter term should be restricted to cases of *extra*-uterine fœtation, and to those few cases of *intra*-uterine fœtation where, through either accident or disease the products of conception are dislodged into the abdominal cavity, in which the fœtus is then retained, and its tissues become the seat of a deposition of lime salts. The steps by which this change is effected, briefly stated, are an absorption of the watery constituents, a fatty and colloid degeneration of the morphological elements of the fœtus, resulting in a mortar-like (*mörtelartiges*) mass, composed of the phosphate and carbonate of lime, cholesterine, and blood-pigment, which, still retaining the shape of the fœtus, gradually lessens in size, becoming dryer and more pulraceous. It is a calcification, and not an ossification. A full and rounded result of these changes is rarely seen, as years are necessary to their completion. But some of the fœtal appendages respond either easier or earlier than others, and here may be found, even after the lapse of a comparatively short period, evidences of calcification; such must be found before the term Lithopædion can be properly applied. The literature on the subject is remarkably scanty. This is hardly to be wondered at when the infrequency of the accident is considered, as well as the fact that such cases, of necessity, endure through a long period of years, and notes taken early in the case are usually unobtainable at the autopsy. I am especially sensible of this latter difficulty, as the case which fell into my hands was, during the pregnancy which resulted in lithopædion, under the care of a most careful and intelligent observer, who, suspecting the nature of the case, took copious notes, which, when most needed, could not be found. The increasing rarity of this accident is probably due to the great advances made in abdominal surgery, — operative taking the place of expectant treatment in these cases. Although the subject is of almost no importance from a clinical point of view, still, I have thought the collection of the reports of such cases as could be found might be of

interest. In looking up the references, especially those from the German, I am greatly indebted to Dr. J. W. Klinghammer, of Boston.

CASE I.

Is reported by Dr. Brandt, in the *Edinburgh Medical Journal* for 1862:—

Miss A. was born	1778		
“ was married	1795,	at the age of	17
“ first child	1796	“ “	18
“ second child	1801	“ “	23
“ pregnant	1804	“ “	26
“ third child	1808	“ “	30
“ fourth child	1815	“ “	37
“ died	1858	“ “	80

No history of the third pregnancy. The autopsy was performed September, 1858. The tumor weighed 1.8 kilos, 20.32 c.m. in length, 13.33 c.m. in diameter, 40.64 c.m. in circumference. It was a bony cyst containing a fœtus, head uppermost, looking to the left and downwards. The spine and back were in apposition with the right side of the cavity; the head was decidedly compressed; the cord could be distinguished passing round the neck; the whole body was twisted in its long axis

CASE II.

Is reported by Dr. Conant, in *New York Medical Journal*, May 10, 1865, page 140.

So far as known the pregnancy, which was the first, was normal, labor-pains came on at the usual time, lasted a few days, and subsided. Subsequently she was afflicted with profuse and most offensive perspiration, which was almost unbearable to her attendants. After a time this disappeared, and slow recovery ensued, attended by a hard tumor in her side, which caused her no inconvenience other than a sense of weight. Subsequently, she gave birth to three children. In June 1863, 35 years after the accident, she died. The autopsy revealed a calcified fœtus, extra-uterine, seemingly, not enveloped with, or in, membranes: another hard mass, said to have been the uterus, was found in the abdomen, this, however, contained the remains of the placenta, in the opinion of Dr. Conant.

CASE III.

Is reported by Dr. Parkhurst in *Medical Times and Gazette*, vol. 1, 72, p. 655.

She became pregnant in 1802; nothing unusual about the pregnancy was noticed; the catamenia ceased entirely; fetal movements appeared at the usual time. Premature labor was begun at 8½ months, as the effect of a fright. The pains gradually subsided, and for two or three weeks she was comfortable. Her health then began to decline, and for 1½ years she was an invalid. After this period there was a gradual restoration to a condition of comparative health, though she was subject to attacks of severe abdominal pains at irregular intervals. She died in 1852, at the age of 77. The autopsy disclosed a tumor, the external surface of which was smooth and white, and composed of fibro-cartilage. Its weight was 3.6 kilos. There was no connection with the Fallopian-tubes or omentum. The external surface of the fœtus was encrusted with an earthy substance.

CASE IV.

Is reported by Dr. Ilans Chiari, *Vienna Med. Presse*, vol. 17, No. 38, page 1092.

In this case symptoms of pregnancy were observed in 1827; but no birth followed them; the patient died at the age of 82, of pneumonia. At the autopsy the tumor was found to be attached to the walls of the uterus. It was about the size of a man's head, and here and there, over its surface points of calcification could be detected. The uterus, right tube, and ovary were normal; the left ovary was wanting. The fœtus was enveloped in a capsule, and was in a remarkably well-preserved state; the face, internal organs, and even the striæ of the muscles being recognizable. The placenta was found, but its position is not stated.

CASE V.

Is reported by Dr. Galli, in *La Sperimentale*, xxxix. : 2, p. 135.

In this case, two children having been borne, pregnancy occurred, for the third time, at the age of thirty. Fœtal movements ceased after the eighth month. No birth followed. Subsequently, for a long period, she suffered from severe abdominal pain. Became pregnant again, and was delivered of a healthy male child. The product of the third pregnancy was carried for thirty-seven years. In her sixty-seventh year she fell, and probably disturbed the lithopædion, as a violent peritonitis intervened, from which she died. The autopsy revealed a well-formed lithopædion; but nothing further is stated.

CASE VI.

Is reported by Dr. Plexa, *Monatschr. f. Geburtsh.*, xxix., 4, p. 242.

In this case symptoms were manifest which caused the diagnosis of extra-uterine pregnancy to be made. There were repeated attacks of abdominal pain, accompanied by fever. These gradually subsided, and strong hopes were entertained that this case would eventuate in a Lithopædion. After one and a quarter years, however, a peritonitis ensued, from compression of the intestines between the tumor and the abdominal walls, which caused the patient's death at the age of forty. At the autopsy it was found that the fœtus had entered the abdominal cavity by the bursting of the left Fallopian-tube. The right ovary and tube were normal. The color of the fœtus was dark-brown and calcification had begun.

CASE VII.

Is reported by Prof. J. Van Graau and Dr. Schrant in *Genees. en Heilkunde te Amsterdam*, ii., 1, pp. 17-96.

The patient was married at twenty years of age. Had seven children, and three miscarriages. Twelve years before her death she noticed a gradually increasing swelling of the abdomen. The tumor was distinctly movable, and appeared to be adherent at the umbilicus. A diagnosis of lithopædion was made; and, at her death, at the age of forty-two, in the Amsterdam Hospital, this was confirmed. The tumor was free, except at the front, where it was attached to the abdominal walls. The fœtus was developed in a calcified membrane; its head was situated at the umbilicus, the back toward the left hypochondrium; arms and legs drawn toward each

other, and to the right. The uterus was in the lower pelvis, and was normal. The left ovary and tube were also normal. In the place of the right ovary there seemed to be a cyst, filled with a brownish substance, attached to the tube. After the covering was stripped off the fœtus was seen with the head, legs, and arms drawn toward each other. The internal organs, muscles, and other structures were easily recognized.

CASE VIII.

Is reported by Dr. Wagner, *Arch. des Heilk.*, vi., No. 2, p. 174.

The patient was a widow, sixty-eight years old. At the age of twenty-four she had given birth to five children. In her thirty-seventh year she again became pregnant, but was never delivered of the child. Labor-pains were not present. For a long period the abdominal enlargement remained constant in size, and Cæsarean section was advised. Finally, the tumor began to grow smaller; her menses returned, and fair health was experienced, the only complaint being of a feeling of weight in the abdomen. At the autopsy the tumor was found to fill the lower pelvis, and to be attached to the bladder, rectum, and uterus. The tumor weighed three-quarters of a pound, and was about the size of a man's head. It was covered by a yellowish membrane. The left tube and ovary seemed to be growing from the tumor, the uterus being pushed to the right. The fœtus was of female sex; the head was much drawn to the right, and bent upon the thorax. The skull was markedly compressed, the bones overlapping; calcification was present, but not uniformly. The various organs and muscles were not distinguishable, being changed to a fatty mass, which contained hæmatoidin crystals.

CASE IX.

Is reported by Dr. Bossi, *Sitzmeister d. Vereins d. Aertze in Steirmark*, xi, page 37.

In this case a lithopædion was diagnosed in 1868. During the years 1869 and 1870 abortion was induced several times. The operation was repeated in 1872, with a fatal result, peritonitis following. The autopsy revealed a pear-shaped tumor about the size of a man's head, covered with a capsule, which was very thick and hard (calcified). Portions of the fœtus were in a natural condition, and portions were changed to adipocere, some of the bones being entirely denuded. The tumor communicated with the rectum by a small opening. The uterus and tubes were normal. Right ovary atrophied, left one adherent to tumor.

CASE X.

"Tübingen Inaugural-Abhandlung," von Wilhelm Kieser.

The lithopædion was found in a woman 90 years of age, in 1720. In 1674 she had all the symptoms of pregnancy, fetal movements being very noticeable. At the expiration of nine months labor-pains started up; the membranes ruptured. Pains continued for two weeks, and then gradually disappeared; the fœtus having apparently escaped into the abdominal cavity, after rupture of the uterus. Two children were subsequently born. The autopsy revealed a large tumor, 13.5 c.m. in diameter, covered with a capsule so hard that a knife could not cut it. The stroma contained an exudation in which lime-salts were deposited. The skin of the fœtus was well preserved, covered by epidermis more or less calcified. The muscles

could not be recognized, having been changed to a "soft substance" (adipocere). The brain was a blackish-brown mass, which was pulverulent and easily melted; the membranes were of a leathery consistence. A citron color was diffused throughout the entire structure. The reports concerning the position of the tumor are not trustworthy.

CASE XI.

Is reported by Smellie in his "Collection of Cases and Observations in Midwifery," vol. ii, page 65.

The patient was pregnant in 1731, with the usual signs. At the 6th month fetal movements ceased, as the result of a fright. Under treatment she discharged a mass, which was thought to be a part of the placenta, as well as a small amount of fluid. There was no decrease in the size of the abdomen. In July, 1733, two years and two months from her first pregnancy, labor-pains returned, with an apparent rupture of membranes. At this time the child was found in the abdomen. In January, 1734, she became pregnant, and was delivered, Oct. 28. She was again delivered, Oct. 22, 1735, also Oct. 9, 1738, and June 17, 1741. She was admitted to Guy's Hospital Oct. 14, 1747. She died Nov. 7, 1747. The autopsy showed the abdominal contents to be nearly in their natural state. In the right pelvis was a child, attached to the ilium and neighboring membranes by the peritonæum, in which the tube and fimbriae were apparently lost. The fetal integument had become partially calcified.

CASE XII.

In giving the history of this case I hoped to quote from the record-books of the physician in attendance at the time of the accident, who, as I understand, took extensive notes; but I am unable to do so, owing to his death a few years ago, and the subsequent destruction of his records. I am fortunate, though, inasmuch as such information as I have of the case comes from a twin sister, who is still a remarkably vigorous woman, both mentally and physically, and whose statements, as far as they go, are undoubtedly correct. Mrs. A—— was married September 24, 1844. She never had any miscarriages. She was delivered of a perfectly healthy child, January 29, 1848. Early in January, 1856, she became, as events proved, pregnant again; though her condition at the time was merely surmised, as menstruation continued to be present, and, in fact, existed, with more or less regularity, throughout her entire pregnancy. It was not until the middle of May that the attending physician made a positive diagnosis of pregnancy, basing his opinion on fetal movements, which became manifest at that time. Early in March, while visiting friends, she fainted, vomited, and complained of epigastric pain. There was no flowing at this time. The following day she rode home, a distance of four miles. Directly after this she had three "inflammatory fevers," characterized by abdominal pain, excessive tympanitis, and uncontrollable

nausea and vomiting. During one of these attacks an abscess formed just above the pubes, which opened, but did not discharge much, if any. Counting from the middle of May, when foetal movements began, October 1 would be the probable date of confinement. About that time the physician was summoned, not on account of labor-pains, as she never had them, but on account of excessive and painful movements of the child. These were always very marked, and caused her the utmost inconvenience. As she expressed it, she felt more life with this child in two hours than during her entire previous pregnancy. October 13 the physician was again summoned for the same reason as before. At this time "something was rubbed on the abdomen," after which the movements grew less and less, and finally ceased. For the following ten years she was an invalid, though nothing very explicit could be obtained as to her condition. She was generally miserable, and had a number of attacks of abdominal pain at irregular intervals, sometimes accompanied by icterus. During this period the tumor very gradually decreased in size, finally remaining stationary, and causing no trouble other than a feeling of weight when standing or walking too long. Her health was fair until 1883, when a malignant growth attacked her larynx, which eventuated in her death, December 24, 1886. The autopsy was performed December 26, 1886, Drs. Bill and Metcalf assisting. The body was very much emaciated. The tumor was apparently situated in the median line, with its most prominent point at the umbilicus, but on palpation it was found to extend downwards and to the left. On making the incision it was found to be adherent to the abdominal walls, and it seemed as though it would have soon made its way through, either from pressure or ulceration, so thinned had the structures become at the point of its adherence. The position of the tumor may be best described by borrowing the obstetric expression, sacrum, left anterior, though it was entirely out of the pelvic cavity, the base of the skull being on a level with the umbilicus. It was almost lying loose in the abdominal cavity, the only points of attachment being the one just referred to, to the abdominal wall; what was probably the umbilical cord, and some small adhesions to the intestines. These were ranged round the tumors, none in front of it, and were one mass of adhesions, forming, with the abdominal wall, a cavity, as it were, containing the tumor. The umbilical cord (?) passed directly downwards, enclosing the uterus, and then gradually fading out into the peritoneum. Nothing that would answer for a placenta, or the remains of one even, could be found. Roughly speaking, the parts of the fœtus were normally disposed, the thighs and arms being flexed on the abdomen and chest respectively. The left leg was rotated slightly outwards, as well as

extended, and the forearms, instead of being crossed, were more or less parallel with the long axis of the body, the hands being placed well up beside the head, as is shown in Figs. 16 & 17. The tumor weighed $2\frac{3}{4}$ lbs., was $8\frac{1}{2}$ in. long, and $12\frac{1}{4}$ in. in circumference. The cross-section showed it to consist of a fœtus and its envelopes, the process of calcification being especially marked in the membranes. The uterus, Fallopian-tubes, and ovaries were also removed, but furnished no points of importance. The autopsy suggested an extra-uterine pregnancy of the abdominal variety; but the history points rather to one of the tubal variety, primarily. To epitomize the various dates:—

Mrs. A——— was married in	1844
1st child	4 years later.
2d pregnancy	8 “ “
Probable rupture of cyst and peritonitis	at the third month.
Death of fœtus	“ “ ninth “
Period of ill health	10 years.
“ “ health	27 “
Death from cancer of larynx invading the lung,	at the age of 67.

SPONTANEOUS EXPULSION OF UTERINE FIBRO-MYOMATA AFTER MISCARRIAGE; ALSO, OBSERVATIONS UPON THE TREATMENT WHICH SHOULD FOLLOW MISCARRIAGE.

BY ANDREW F. CURRIER, M.D., OF NEW YORK.

SPONTANEOUS expulsion of uterine polypi is not an occurrence which can be considered common. If nature would only adopt such a method for getting rid of these offending and offensive bodies with a reasonable degree of regularity, it would relieve both patients and physicians of a great deal of misery and anxiety. Quite a number of cases are recorded in which such tumors have disappeared, presumably by resorption, the names of Emmet, Cazeaux, Sedgewick, Scanzoni, Gussman, Schröder, and Gusserow being identified with such cases. (See Gusserow, *Neubildungen des Uterus*, p. 53.) But such reports must always excite more or less scepticism, for, whatever be the veracity of the reporter, or his skill as a diagnostician, — and there can be no question as to either in the case of all the names which have been quoted, — there must always be an element of uncertainty if the tumor itself is not appreciated by the naked eye as well as by the intelligent fingers.

Matthews Duncan reports a case (*Edinb. Med. Jour.*, 1867) which came under his observation, in which the patient had an uterine fibroid tumor as large as a child's head, which disappeared so suddenly that he thought it must have been enucleated spontaneously, and expelled without being particularly observed by any of the patient's attendants. This seems to me a very reasonable suggestion, and, in the light of my experience with the case which is here recorded, may afford an explanation for more or fewer of the sudden disappearances and resorptions which are reported.

The essential cause of the phenomena which are included in the subject under consideration must consist in a necrotic process, which varies as to degree and character, together with the contractile force of the uterus. That process may involve either suppuration and gangrene, or the tissues of the tumor may gradually be deprived of their nutriment, the connective tissue becoming more condensed and firm, and the deposit of mineral salts more abundant, until, in either case, the presence of violent uterine contractions, by whatever cause excited, becomes sufficient to break the connection with the base of attachment, and the offending body is cast forth from the organ and from the organism.

To the causes which lead up to this process, as well as those which give rise to the development of such growths, I do not propose to pay any attention at the present time, with the exception of the one cause of pregnancy. The field is too large to be included, in all its bearings, within the limits which I have proposed for myself. That pregnancy has a very decided influence in producing spontaneous expulsion is sufficiently recognized by several of the systematic writers upon obstetrics and gynæcology. Thus Barnes ("Obstetrical Operations," 3d ed., p. 287) says: "In not a few instances a myoma has been spontaneously expelled some days or weeks after labor. During labor a process of loosening of the attachments favoring enucleation takes place," etc. Gusserow also (Op. cit., pp. 53 *et seq.*) quotes a number of cases in which this event occurred. It is not difficult to understand why this event should occur: given a fibroid tumor within the cavity of the uterus, any force which tends to produce congestion in the organ will have the same effect upon the neoplasm which is nourished by it. Hence it is that unimpregnated women having fibroid polypi of the uterus suffer from menorrhagia at each recurring menstrual epoch with its attendant phenomena of congestion.¹ Such a growth within the uterus, with the hæmorrhages and profuse glandular discharges which usually accompany it, is, in most cases, an effective bar to pregnancy, and fortunately so, but the barrier is not insuperable, and, conception having occurred, the great diversion of nutrient forces to the uterus must be shared by its parasite.

Thus, while the uterus enlarges and becomes more capacious, the neoplasm enlarges also, and the location of the latter, with reference to the fœtus, will determine, to a great degree, whether the gestation will be completed or not. If the tumor is below the fœtus, and develops in the direction of the vagina, it may even fill the pelvic cavity without interfering with fœtal development. (See case reported by P. F. Mundé, *Am. Jour. Obst.*, Feb., 1885, p. 188.) If, on the other hand, it develops above the fœtus, in which case it will usually have a fundal attachment, it will be almost certain to encroach upon the fœtal envelopes, and, sooner or later, cause the premature discharge of the fœtus; in other words, as the fœtus enlarges, the tumor enlarges also, whether *pari passu* or not is not altogether material, and, when the demands of the fœtus for nourishment exceed those of the tumor in point of imperiousness, retrograde changes in the latter must take place; when the sum of these changes, manifested

¹The same phenomena of congestion and enlargement are equally noticeable with extra-uterine fibroid tumors during menstruation, as I have frequently had opportunity to observe. See also in this connection a valuable paper by Dr. John Williams, *Lancet*, I., 1880, pp. 764, 573, entitled, "On some periodical changes which occur in fibroid tumors of the uterus, and their significance."

by diminished cohesive union with the parent organ, plus the influence of the tumor as a foreign body, reaches the limit of tolerance, the inevitable result must be a degree of irritation sufficient to excite uterine contractions and the extrusion of the fetus and its coverings. If to this excitation is superadded the irritation which may be produced by a powerful oxytocic, for example, ergot or a profound mental impression, additional uterine contractions may be excited, and these may be sufficient to wrench the polypus from its base, and also expel it from the uterus and vagina.¹ This theory, in my opinion is sufficient to account for the spontaneous expulsion of uterine fibro-myomatous polypii, and is the only one which enables me to account for the phenomena in the case which is here presented.

Mrs. H. is a native of France, and is twenty-two and one-half years of age. She had good health until she was nineteen years of age, and then suffered with pulmonary hæmorrhage during a period of six months. Her last menstruation ended Dec. 24, 1886. Previous to that time she stated that her menses had been regular and normal, although they usually lasted eight days. A few days after the termination of her last period she fell, and suffered from uterine hæmorrhage for the subsequent twelve days. Until her miscarriage occurred she was at no time aware that she was pregnant, nor was she conscious of the existence of an intra-uterine growth. Her husband is also a native of France, and thirty years of age. He had a pulmonary hæmorrhage when twenty years of age, and again when twenty-five. No account of any venereal or other sickness could be obtained.

The patient's history from the time of conception until May 10 was uneventful; utero-gestation had, therefore, reached the end of the fourth month. Uterine hæmorrhage, together with rupture of the fetal membranes, began May 10, and continued without interruption until May 15. On May 14 and 15 she suffered great pain, and on the 16th the fetus was expelled. She was attended during this period by my friend, Dr. John B. Isham, who at first administered a small dose of Squibb's Fluid Extract of Ergot. It caused so much nausea, however, that its use was discontinued. After the fetus and membranes were discharged the uterus still remained very large and hard, its upper limit being at the level of the umbilicus.

These facts being related to me by Dr. Isham, I suggested as a probable diagnosis either a fibroid tumor or a twin pregnancy, and advised

¹ Danyau and Duncan each report a case in which partial enucleation was effected, which was easily completed by surgical means. See Barnes, *op. cit.*, p. 287.

exploration and curetting of the uterus. Experience has taught me the inestimable value of this plan of procedure, and I always adopt it after miscarriage has occurred, unless perfectly satisfied that the uterus has been entirely evacuated. I was invited to see the patient in consultation and appointed the afternoon of the following day. In the meantime the patient was informed by her husband of the appointment, and the necessity for some kind of an operation. The impression produced upon her was so profound that uterine pains came on a few hours previous to the appointed visit, and a tumor was expelled (a drawing of which is herewith presented), the act being accompanied with the loss of several ounces of blood. I found the patient weak, anæmic, and hysterical, and still suffering from slight metrorrhagia.

She was placed upon a table in Sims's position, and A. S. Hunter's self-retaining speculum was adjusted.¹ The cervix was large, soft, and patulous at the *os externum*, but closed at the *os internum*. Simpson's sound was passed, in a normal direction, to the $4\frac{1}{2}$ -inch notch. The vagina was irrigated with very hot, weakly carbolyzed water, the uterine canal was rapidly dilated with gum-elastic bougies, and then an applicator wrapped in cotton-wool, the latter being subsequently saturated with a 10 per cent. solution of muriate of cocaine, was passed to the *fundus uteri* and allowed to remain in position five minutes. The effect of the cocaine was not only to anæsthetize the uterine mucous membrane, *but also to stop the hæmorrhage from it*; and I desire to emphasize the value of cocaine for this purpose, which has not been recorded by any other writer, to my knowledge. The entire mucous membrane of the uterine canal was then carefully scraped with the dull curette, a quantity of *detritus* being removed, and pure carbolic acid was applied to the surface thus scraped. This was followed by the adjustment of a firm vaginal tampon of carbolyzed non-absorbent cotton, after which the patient was placed in her bed.

No hæmorrhage followed the operation at any time, but on the following day her temperature was high, and her pulse rapid for a few hours. This did not surprise me in view of her weak and anæmic condition, and her violent hysterical demonstrations at the time of the operation. Convalescence quickly followed, but with decided manifestations of renal trouble, Dr. Isham reporting that her urine contained four per cent. of albumen two weeks after the operation. Her renal trouble may have been caused by the pressure of the enlarged uterus upon the ureters.

¹ This instrument is a most excellent one, and is highly recommended. In cases in which ether is not required it enables one to operate without the necessity of assistants, unless hæmorrhage should be profuse.

Cases of albuminuria and Bright's disease from similar conditions are recorded by Hubert (*Bull. de la Soc. Anat.*, 1873, p. 870), and quoted by Gusserow (Op. cit., p. 48).¹

The details of this case, which may seem tedious, have been given because they illustrate the value of the method of operation adopted. The latter is totally opposed to the old-fashioned, so-called expectant plan of treatment, which must have been inspired either by timidity, or ignorance, or both. It is an outgrowth of the modern antiseptic theory, for it is unnecessary to say that such an operation should only be done with antiseptic precautions. Inflammation of the cellular tissue or the peritonæum is quite unlikely to follow it. Septic absorption will be prevented by the carbolic acid which is used, and it is also unnecessary to say that this must be used with caution and dexterity, not only to prevent toxic effects, but also in such a way as not to cauterize anything but the internal surface of the womb. Very little force is required or justifiable in performing the operation, and should peritonitis or cellulitis follow it the presumption would be that it was caused by unnecessary violence. The dull curette acts simply as a prolonged finger and finger-nail, and if it is as clean as it should be it is much less likely than these to be a means of infection to either patient or physician.

The fibro-myoma in the case under consideration was nearly four inches long, and irregularly wedge-shaped. The apex of the wedge was rough and irregular, as if it had been torn violently from its attachment. The tissue of the body of the tumor was pale, dense, and hard; from its base projected two spherical masses about one and a half inches in diameter, and just above them was a third, which was somewhat smaller. These spheres or lobes were covered with mucous membrane, and, on section, showed a soft, broken-down tissue of a dark-red color. The odor of decomposition from these masses was very offensive, their structure being distinctly different from that of the hard, almost stone-like tissue of the body of the tumor. The specimen corresponded with Virchow's description of a fibro-myoma. Klebs states that the coalescence of several tumors, as occurred in this case, is rarely seen. Emmet describes a case which resembled mine in some particulars ("Prin. and Prac. of Gynecology," 1880, p. 580), and Barnes (Op. cit., p. 289) quotes Crisp's case, in which a fibroid polypus was forced out of the uterus soon after labor was accomplished, the patient unfortunately dying in collapse; and another (Op. cit., p. 290), in his own practice, in which the tumor grew

¹ I have recently been informed by Dr. Lohm that the patient was much improved July 1, though she was still anæmic; also that her urine contained only 2 to of 1 per cent. of albumen, and that she was about to go to the sea-shore.

from the fundus, and was found, three months after labor, decomposed and causing chronic pyæmia. Such are the dangers, therefore, which accompany a fibroid polypus of the uterus when complicated by pregnancy, and yet the premature termination of pregnancy in fortunate cases like mine may be the means of effecting a cure.

Considering the degree of decomposition which had been reached, and the fact that a process of septic absorption had already commenced, it is doubtful whether the patient whose history I have narrated could have successfully resisted the continuation of that process for the remaining five months of gestation, with the perils of parturition and the puerperal period superadded. Siebold and Wigand (quoted by Churchill, "Diseases of the Uterus," 1866) consider that the presence of a uterine fibroid polypus renders the continuation of pregnancy to term doubtful; but the cases of Cazeaux, Sedgewick, Scanzoni, Gussman, Schroeder, Gusserow, and others (Gusserow, *Op. cit.* p. 52), show that this is not only possible, but by no means infrequent. On the other hand, when we consider that the tumor may, and probably will, develop rapidly during pregnancy, that under certain conditions, chiefly mechanical, it will absolutely prevent the birth of a full-term fœtus by the natural passages, while under others it will undergo retrograde changes, which will imperil the lives of both mother and fœtus, it becomes a serious question whether inaction in such cases is justifiable. It seems to me, therefore, that in those cases in which the progress of the growth is below the fœtus, its removal at as early a period as possible, as practised with such success by Mundé¹ (*loc. cit.*) is indicated, and that if the growth is out of reach (*e.g.*, above the fœtus, as in my case) premature labor should be induced when the symptoms become prominent, especially if they are delayed until the fœtus is viable.

¹ Mundé states that in his case the tumor was removed during the sixth month of utero-gestation, and also that he found only one similar case recorded. In that case the tumor was enucleated at term by Schröder. In both these cases the tumors were below the fœtus. Finally, in the transactions of the American Gynæcological Society for 1886 (p. 432), Parish reports thirteen cases in which Cæsarean section was performed on account of uterine fibroid tumors, and all but four of them were fatal.

ON THE USE OF AVELOZ IN THE TREATMENT OF CANCER.

BY J. E. JANVRIN, M.D.,

Surgeon to the New York Skin and Cancer Hospital and to St. Elizabeth's Hospital.

My attention was first called to this remedy in December, 1884, by a patient, Mrs. Le F., who was suffering from carcinoma of the breast, in a very advanced stage. A son-in-law of the patient, a chemist and druggist by profession, through the illness of his mother-in-law, had become interested in the different so-called cancer cures. Through his kindness I obtained a copy of the United States Consular Reports for October, 1884. In a letter dated Recife, September 5, 1884, Dr. R. Bandeiro, Surgeon at the Pedro II. Hospital, Pernambuco, writes to Consul Atherton as follows:—

“A magistrate, named Dr. Guennes, was the first that made it known, some four years ago. He had canceroid of the face, and went to his place, ‘Brys da Madre Deos,’ after having consulted several doctors that were unable to cure him. He was perfectly cured there by the natives of the country, and wrote to Recife, sending the plant and its juice, that was tried here with success in several cases.

“Last year the juice of aveloz was used in the Hospital Pedro II. with so animating success that Dr. Vellozo published a notice in the papers of Recife, advising the employment of it. Many experiences have been made in cases of epithelioma of the lips, nose, face, and eyelids. The application of aveloz in ulcerated cancer (sarcoma or carcinoma) has not given the result that many doctors hoped.

“The plant belongs to the family *Euphorbiacæ*, was discovered by Martin, in ‘Zoazeiro,’ Bahia, and described the first time by Müller in the important book of Martin’s, ‘Flora Brasiliensis, in 1875, with the name of *Euphorbia Heterodoxa*. It grows spontaneously in the whole north of Brazil, where it is known by different names, the most common being alveloz, arveloz, or aveloz.

“We have used generally the fresh juice of the plant, because it becomes soon coagulated, and acquires a bad smell; but our chemists have succeeded in keeping it liquid and unaltered by treating it with salicylic acid, and that does not modify its action.”

The preparations which the writer of this article has used are two in number, the “Milk of aveloz concentrated” being the one on which his somewhat limited experience has taught him to rely. The other, called

"Special formula," is evidently a preparation largely diluted with vaseline, and is not strong enough to be of much use in the treatment of actual cancerous growths. In simple ulcerations it is very good. Both of these preparations are put up by Numa Pompilio, Surgeon Dentist in the Pedro II. Hospital, Pernambuco, and can be obtained in this country from John T. Kirby, Importer, No. 16 Beaver street, New York. I have always found these preparations satisfactory, especially the "Concentrated."

The following cases are reported as showing the effect of the aveloz in each instance:—

CASE No. 1. — Dec. 30, 1884. Mrs. Le F., age 60, and the mother of several children, carcinoma of right breast; amputation had been performed some eight months previous to my seeing the case. The disease had returned promptly, and had involved the axillary glands. The few applications of the aveloz made late in the progress of the disease seemed to arrest, to a moderate degree, the rapidity of its growth, and also to overcome to a great extent the offensiveness of the discharge.

CASE No. 2. — Mrs. D., married, no children, age 35, came under my care early in March, 1885. She had suffered from profuse and frequent hæmorrhages for several months, and was decidedly anæmic. On examination I found extensive carcinoma of the cervix, and an extension of the disease, to a considerable degree, into the body of the uterus. I decided to remove, *per vaginam*, the entire uterus, if in the progress of the operation I should think it justifiable, or, if I should find the disease too far advanced to justify its entire removal, to perform the supra-vaginal amputation.

In dissecting up between the bladder and the cervix it became evident that the disease had advanced to such an extent that it would not be proper to subject the patient to the dangers of total extirpation. I therefore performed the supra-vaginal operation. After the patient had recovered from the operation—the latter part of April—the aveloz was applied once a week for some two months to the surface (which had in the meantime nearly healed over), my object being to cause a profuse watery discharge, and to have it act as a derivative, and thus retard, if possible, the further extension of the disease. During the autumn of the same year the same course was pursued, and at the expiration of a full year from the date of the operation there seemed to be no extension of the disease. No hæmorrhage had occurred during this time. Menstruation had been regular, and the patient gained in health and strength. After each application there had been a profuse watery, inoffensive discharge. The aveloz "Concentrated" preparations was applied directly to the part affected, and a tampon of carbolized cotton, nearly dry, was then introduced to

keep the application *in situ*, and was retained for some six hours. At this date the patient moved from the city, and all treatment was stopped. I have recently learned that during the past winter the disease made rapid progress, and proved fatal early in the present summer.

CASE NO. 3. — May 7, 1885, saw Mrs. P. in consultation with Dr. F. A. Castle. Patient about 40 years of age. Carcinoma of the cervix and body of the uterus. At this date she was anæmic, considerably emaciated and cachectic. Dr. Castle had been using the "Special formula," the weaker preparation before alluded to in this article, and with the result of prolonging life at least, mitigating pain, and rendering the discharge less offensive. The disease was so far advanced that anything in the way of operative procedure was contra-indicated. During the month of July and half of August the patient was under my care at Saratoga Springs, and I applied the preparation in question every third day.

About the middle of August she decided to go to Long Branch, and I therefore placed her under the care of Dr. James B. Hunter, then at that place; and, in a letter dated Aug. 14, 1885, called Dr. Hunter's attention to the use of the aveloz. In a subsequent letter, in answer to one from Dr. Hunter, I gave him a short account of my limited experience with the drug, and informed him where he could obtain it. Dr. Hunter watched this case for several weeks, until she returned to the city, and again came under the care of Dr. Castle. She lived until the spring of 1887. In the *New York Medical Record* of June 11, 1887, Dr. Hunter reports five cases of epithelioma of the cervix, in which he had used the aveloz, since August, 1885. His conclusions are as follows: "In cases of spongy, easily disintegrated cervixes, it had left a better surface than nitric or chromic acids, or than the actual cautery." "It had also seemed to him that the recurrence (of the disease) was longer delayed than after the ordinary caustics. He had confined its use to cases where the knife was not applicable, or where operation was not allowed."

CASE NO. 4. — Mrs. G. C., age 42, no children, came under my care Oct. 19, 1885, for what appeared, from all clinical symptoms, to be epithelioma of the cervix in its early state. The patient was of a highly sensitive and nervous temperament, anæmic, and cachectic, having profuse menstruation, somewhat irregular, and suffering from sharp, lancinating pains in the uterus and surrounding tissues, together with the characteristic offensive discharge. I began the use of the aveloz, the strong preparation, at once, making an application every third day (excepting during menstruation), always cleansing thoroughly the cervix

with the warm carbolic solution before applying the aveloz, and, having made the application, keeping it in position (as before mentioned) by the carbolized tampon. A profuse watery discharge followed each application. A very slight burning sensation was usually experienced for an hour or two after the application. All offensiveness disappeared after the second treatment, and at the end of the sixth week, with the loss of a great part of the cervix, all of the diseased tissue was removed. There has been no return of the disease up to the present date. The only other remedies made use of in this case were ordinary tonics, principally quinine and iron. At the present time the patient is in excellent health.

CASE No. 5.—Mr. G. F. B., age 40. Epithelioma of the right side of the nose, near the angle of the eye. December 3, 1885, made the first application and continued twice every week for five weeks. The diseased surface was one-quarter of an inch in width by one-half an inch in length. The escharotic effect of the aveloz was marked, and after the sixth or seventh application all of the diseased tissue was removed. The applications could not be made quite as thoroughly as I wished, on account of the close proximity of the eye, and for that reason a little longer treatment was required than otherwise would have been. The patient's general health had not been affected by the disease. I am confident, however, that there was no mistake in diagnosis, the patient having lost one sister from cancer of the breast, and having another at the present time suffering from far-advanced epithelioma of the cervix and uterus. He has remained in perfectly good health up to the present date.

CASE No. 6.—Mrs. F. F., German, age 70 years. Epithelioma of the right forehead. Had been a patient in the skin and cancer hospital in the autumn of 1885, and had been treated by arsenical paste, the diseased tissue having been thoroughly removed. In November, 1886, she entered the hospital again, the disease having recurred, and covering a space some two inches in diameter. Applications of the aveloz were made twice every week, the parts having been first cleansed by the carbolic wash. After each application the surface was exposed to the air for two hours, and then covered by lint dampened with the weak carbolic solution. The burning pain was quite severe, and continued so for several hours after each application. On several occasions quite a little hæmorrhage took place as the result of the escharotic.

After a treatment of some six or seven weeks all the diseased tissue was removed; and the surface (excepting that part where the frontal bone was exposed) was in a healthy, granulating condition.

The patient's health improved constantly, and at the present date there has been no return of the disease.

CASE No. 7. — Miss J. J., age 43, epithelioma of the right side of the vulva. The patient was first seen May 25, 1887. Disease involving a surface about three-fourths of an inch in width by an inch and a half in length. (Two years ago I removed, by the knife, from this patient, an epitheliomatous growth, including the clitoris, of the size of a large Lima bean. This was subjected to microscopical examination, and was found to be epithelioma.) Applications of the aveloz every second or third day from the 25th of May till the 23d of June destroyed all of the diseased tissue, and left the parts in a perfectly healthy condition. The applications in this case gave a good deal of pain, and the patient was directed to make use, some three hours after each application, of a strong solution of bicarbonate of soda to relieve the burning. She is improving in general health under tonics, and the case is still under observation.

In several other cases of epithelioma of the cervix, in which the disease was far advanced, I have used the aveloz with the effect of diminishing, to a marked degree, the amount of the discharge, and rendering it decidedly less offensive. In only one case (No. 6) have I noticed any effect upon the kidneys as mentioned by Dr. Barnsfather, of Dayton, Ky., in the *N. Y. Medical Journal* of June 4, 1887. In this case, after one of the applications, the patient became somewhat collapsed, cold, and nauseated, and after some eight hours passed a large quantity of urine with a decidedly offensive odor. The few cases above reported have been selected to set forth fully the effects produced by the drug.

As a local application I prefer it to any other escharotic in such cases of epithelioma of the cervix as *are not far advanced, and in which for any reason it has been decided not to extirpate either the cervix or the entire uterus*. Case No. 4 was of this character, and the exemption from recurrence of the disease for nearly two years gives hope that the good result obtained may prove to be permanent.

In cases, also, in which the disease is so far advanced that any other operation than curetting is contraindicated, the application of aveloz once or twice a week has proved very effective in diminishing pain (after the immediate pain produced by the application has ceased), and in decreasing the quantity and offensiveness of the discharges, thus prolonging the life of the patient, and making her presence much less objectionable, for a while at least, to those in constant attendance upon her.

EDITORIAL.

NINTH INTERNATIONAL MEDICAL CONGRESS.

Quod bonum faustum felixque sit.

At length the time having arrived for the assembling of the Ninth International Medical Congress, the profession of the country is glad to offer a hearty welcome to our foreign guests, and rejoices that so important an undertaking has resulted so successfully. Great has been the labor of the Executive Committee of the Congress. The members of this body did not, from the outset, underestimate the difficulties which they had to encounter, and, with an energy which knew of no fatigue, they engaged in a work both difficult and delicate. In Dr. Austin Flint they had a leader in every way fitted to carry on the work to a high degree of success, and in his death the Congress sustained a severe loss.

Under Dr. N. S. Davis, who, having previously labored in behalf of the Congress, in various capacities, was elected to fill his place, the work has gone on until now, on the assembling of the Congress, we see that the early expectation of success has been more than fulfilled. Not only have the members of the profession in America evinced a wide-spread interest in the Congress, but a very considerable number of our European *confrères* have honored with their presence this international gathering, in spite of the loss of time, and the expense involved in such a long journey.

Many scientific contributions from the leaders of medical thought in Europe have been offered. The number of papers furnished is larger than at the Congress held in London in 1881, which is conceded to have been the most famous medical gathering on record. The work, as outlined, is really too vast to be accomplished in a single week.

The Committee of Arrangements have provided for receptions and entertainments to temper the scientific severity of the Congress with agreeable social relaxation.

The distinguished guests from foreign countries whose names adorn the list of officers of the Congress, and the many foreign members who will participate in the meeting, may rest assured that their *confrères* in America welcome them most heartily, remembering the many courtesies and benefits which our countrymen have received while studying and

travelling in Europe. We sincerely trust that the bonds of friendship may be strengthened, and made more enduring, by the feelings of international professional fraternity, arising from this great gathering.

THE GENERAL PROGRAMME OF THE CONGRESS, AS PUBLISHED BY
THE CHAIRMAN OF THE COMMITTEE OF ARRANGEMENTS.

FIRST DAY. — MONDAY, SEPTEMBER 5th.

The Congress will assemble at Albaugh's Opera House at 11 A.M., and will be formally opened by the President of the United States, to be followed by a short address of welcome by the Secretary of State; address by the President of the Congress; report of Secretary-General and Chairman of Committee of Arrangements. Adjourn at 1.30 P.M. From 3 to 6 P.M., meeting of Sections at their respective halls. Evening *conversazione* at U.S. Pension Hall, from 8 to 11 P.M.

SECOND DAY. — TUESDAY, 6th.

Meeting at 10 A.M. at Albaugh's Opera House. General addresses by Drs. Flint and Semmola. Sections will meet at 11 A.M., and adjourn at the same hour with Congress, at 1 P.M. In the afternoon the Sections will meet from 3 to 6 P.M. In the evening it is expected that a reception will be given by the President of the United States, and the Coreoran Art Gallery will be thrown open to the members and their families.

THIRD DAY. — WEDNESDAY, 7th.

The Congress will meet at 10 A.M. General addresses until 1 P.M. The Sections will meet as usual at 11 A.M., and adjourn at 1 P.M. Afternoon meeting of the Section from 3 to 6 P.M. Evening reception to the members and their families by the citizens of Washington.

FOURTH DAY. — THURSDAY, 8th.

General meeting at 10 A.M. Addresses, if not previously delivered. Meeting of the Sections at 11 A.M.; adjourn at 1 P.M. Afternoon, Sections meet from 3 to 6 P.M. General reception buffet banquet at U.S. Pension Hall, from 8 to 11 P.M.

FIFTH DAY, FRIDAY, 9th.

General meeting at 10 A.M. Transaction of business affairs of Congress. Meeting of Sections at 11, and adjourn at 1 P.M. Afternoon, Sections meet from 3 to 6 P.M.

SIXTH DAY.—SATURDAY, 10th.

General meeting at 10 A.M. Adjourn 11, for visit to Mt. Vernon.

On Sunday or Monday, the day not yet determined upon, an excursion train will leave Washington, with the foreign members and their families, for Niagara Falls, under the escort of a part of the Committee of Arrangements.

The section for Gynæcology will meet at the time appointed, at their rooms in the Masonic Temple, corner of 9th and F streets, Washington.

We have felt that it would be to the interest and convenience of many of our readers to publish a complete list of the officers of the section of Gynæcology of the International Medical Congress, and also a daily programme of the work in the section. This last will be subject to some modification, as a considerable number of papers are promised which have not been forwarded at date.

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Dr. HORATIO R. BIGELOW, Washington.	Dr. CARL PAWLIK, Vienna.

PAPERS FOR THE SECTION.

FIRST DAY.

- "A Brief Sketch of the Early History of Gynæcology." Dr. George Jackson Fisher, Sing-Sing, N.Y.
- "The Law of Increase." Dr. Nathan Allen, Lowell, Mass.
- "Sterility." Dr. H. Marion Sims, New York City.
- "Conservative Gynæcology." Dr. Horatio R. Bigelow, Washington, D.C.
- "Uterine Therapeutics." Dr. A. P. Carpenter, Cleveland, Ohio.
- "Defective Sexual Power and Sexual Abnormalities as Sources of Uterine Disease." Dr. George F. French, Minneapolis, Minn.
- "The Neural and Psycho-Neural Factors in Gynæc Disease." Dr. C. H. Hughes, St. Louis, Mo.
- "Utero-Ovarian Insanity." Dr. John W. B. Nowlin, Nashville, Tenn.

- “Hints on the Causes, Prevention, and Treatment of Chronic Metritis.”
Dr. Hiram L. Getz, Marshalltown, Iowa.
- “The Use of the Vaginal Tampon in Pelvic Inflammations.” Dr.
William W. Potter, Buffalo, N.Y.

SECOND DAY.

- “Urethral Caruncle Histology and Pathology.” Dr. Augustus P. Clarke,
Cambridge, Mass.
- “Urethral Caruncle as a Cause of Hysteria and Hystero-Epilepsy.” Dr.
William Armstrong, Manchester, Eng.
- “Diagnosis and Surgical Treatment of Tuberculosis of the Female
Genital Apparatus.” Professor Hegar, Freiburg i. B., Germany.
- “Malignant Degeneration of Glandular Hyperplasia of the Uterus.” Dr.
Ernest W. Cushing, Boston, Mass.
- “Photo-Micrography Illustrative of Uterine Pathology.” Dr. Moses G.
Parker, Lowell, Mass.
- “Treatment of Cancer of the Uterus.” Dr. A. Cordes, Geneva, Switzer-
land.
- “Extirpation of the Uterus for Carcinoma.” Dr. August Martin, Berlin,
Germany.
- “Vaginal Hysterectomy for Malignant Disease.” Dr. F. A. Purcell,
Manchester, England.
- “Modern Treatment of Uterine Cancer.” Dr. A. Reeves Jackson, Chi-
cago, Ill.

THIRD DAY.

- “Myoma in Pregnancy.” Dr. W. H. Weeks, Portland, Me.
- “Treatment of Uterine Myoma by Ergot.” Dr. Daniel T. Nelson,
Chicago, Ill.
- “Electro-Thérapie des Tumeurs fibreuses de l’Uterus.” Dr. P. Menière,
Paris, France.
- “The Value of Electrolysis in the Treatment of Uterine Myoma.” Dr.
Georges Apostoli, Paris, France.
- “Electrolysis in the Treatment of Uterine Myoma.” Dr. F. H. Martin,
Chicago, Ill.
- “Treatment of Uterine Fibroids by Electrolysis.” Dr. Ephraim Cut-
ter, New York.
- “The Electrolysis of Fibroids and Ovarian Growths.” Dr. F. Semele-
der, Mexico.

- "Tumors of the Breast Treated by Electrolysis." Dr. Alfred C. Garratt, Boston, Mass.
- "Cystitis in Woman." Dr. M. D. Spanton, Hauley, Eng.

FOURTH DAY.

- "The Early History of Ovariectomy in America." Dr. Alexander Dunlap, Springfield, Ohio.
- "When shall we Operate in Tubal Pregnancy?" Dr. J. B. Burton, Liverpool, England.
- "On the Use and Abuse of the Removal of the Uterine Appendages in modern Gynæcological Practice." Dr. Thomas More-Madden, Dublin, Ireland.
- "Histology and Surgical Treatment of Uterine Myoma." Dr. Henry O. Marcy, Boston, Mass.
- "Treatment of Uterine Myoma." Dr. J. Knowsley Thornton, London, England.
- "The Extirpation of the Uterus for Bleeding Myoma." Dr. E. H. Trenholme, Montreal, Canada.
- "Tubal Pregnancy." Lawson Tait, Esq., Birmingham, England.
- "Operative Interference in Early Extra-Uterine Pregnancy." Dr. Michael O'Hara, Philadelphia, Pa.
- "Cæsarean Section." Dr. M. Säger, Leipsic, Germany.

FIFTH DAY.

- "Improved Modes of Intra-Uterine Examinations and Treatment." Dr. Simon Fitch, Halifax, N.S.
- "Intra-Uterine Medication." Dr. J. H. Scarff, Baltimore, Md.
- "Rapid Dilatation of the Cervix." Dr. Wm. H. Wathen, Louisville, Ky.
- "Uterine Dilatation." Prof. Valliet, Geneva.
- "Relations between Changes in the Tissues and Changes in the Shape of the Uterus." Dr. Graily Hewitt, London, England.
- "Artificial and Combined Drainage of the Bladder, Kidneys, and Uterus through the Vagina with and without Graduated Pressure." Dr. Nathan Bozeman, New York City.
- "Endo-Metritis Chronica. The Pathology of the Uterine Mucosa." Dr. Leopold Meyer, Copenhagen.
- "Intra-Uterine Glandular Development." Dr. Samuel L. Nelson, Boston, Mass.

- “Studies of Endo-Metritis, Illustrated by Photo-Micrographs.” Dr. Theodor Wyder, Berlin.
- “Displacement of the Ovaries and Fallopian Tubes, and their Medical Treatment.” Dr. Edward W. Jenks, Detroit, Mich.
- “Displacements of the Uterus.” Dr. W. C. Wade, Holly, Mich.

SIXTH DAY.

- “An Important Point Connected with Abdominal Surgery.” Dr. A. Hewsen, Philadelphia, Pa.
- “Aseptic Wound Treatment in Abdominal Surgery.” Dr. J. W. Jones, Tarborough, N.C.
- “Aseptic Atmospheric Conditions as Applied to Abdominal Surgery.” Dr. David Prince, Jacksonville, Illinois.
- “Treatment of Threatened or Commencing Peritonitis after Laparotomy by Brisk Purgation.” Dr. J. Taber Johnson, Washington.
- “Pelvic Hematocoele.” Dr. Francis Imlach, Liverpool, England.
- “The Buried Suture in Vesico-Vaginal Fistula with Iodolized Silk.” Dr. Valliet, Geneva.
- “Perineo-Plastic Operations by the Use of Catgut.” Dr. J. Veit, Berlin, Germany.
- “The Experience of Six Years in the Performance of the Operation of Shortening the Round Ligaments for Uterine Displacements.” Dr. W. Alexander, Liverpool.
- “The Remote Results of the Operation of Shortening the Round Ligaments for Displacements of the Uterus.” Dr. William L. Reid, Glasgow, Scotland.
- “Uterine Displacements Corrected by Modifications of the Alexander Operation, with the Report of Twenty Cases.” Dr. J. H. Kellogg, Battle Creek, Mich.
- “Treatment of Lacerations of the Cervix Uteri.” Thomas More-Madden, Esq., Dublin, Ireland.
- “Use and Abuse of Tracheloraphy and an Improved Method of the Operation.” Dr. R. Beverly Cole, San Francisco, Cal.

WE greatly regret that, by accident, an excellent drawing, illustrating Dr. Currier's paper, was lost by the engravers.

MANN'S SYSTEM OF GYNÆCOLOGY.

THE appearance of a work of the magnitude and importance of this new system is an event which may well be a source of honest pride to the talented and indefatigable editor, to the distinguished authors, and to the whole profession of the country.

Certainly in no other department of medicine have greater advances been made during the last quarter of a century than in gynæcology, which owes so much to American ingenuity, intelligence, and daring. At length, in the fulness of time, in a series of able monographs, American gynæcology, as evolved and perfected within the memory of men now living, is set forth, enriched with knowledge gained by the study of pathological anatomy, which has been so admirably wrought out by the Germans, and fortified by comparison with the splendid results of modern surgery as perfected by our European brethren.

The first volume consists of fifteen essays, each by an author well known to the profession.

The contributors to this volume are : —

- Dr. E. W. JENKS : Historical sketch of American gynæcology.
- “ H. J. GARRIGUES : The development of the female genitals.
- “ H. C. COE : The anatomy of the female pelvic organs.
- “ H. J. GARRIGUES : Malformations of the female genitals.
- “ E. H. GRANDIN : Gynæcological diagnosis.
- “ E. C. DUDLEY : General considerations of gynæcological surgery.
- “ A. J. C. SKENE : General therapeutics.
- “ A. D. ROCKWELL : Electricity in gynæcology.
- “ W. GILL WYLIE : Menstruation and its disorders.
- “ A. REEVES JACKSON : Sterility.
- “ M. D. MANN : Diseases of the vulva.
- “ C. D. PALMER : The inflammatory affections of the uterus.
- “ T. A. REAMY : Subinvolution of the vagina and uterus.
- “ R. B. MAURY : Periuterine inflammation.
- “ E. VAN DE WARKER : Pelvic hæmatocoele and hæmatoma.

Each of these gentlemen has treated his subject independently and according to his own views, and it is therefore fitting that their essays should be reviewed separately, as will be done in the proper place in the ANNALS. The size of the first volume — 789 pages — makes an extended consideration impossible at present ; but a few general facts may be noted.

In a systematic work like this a large space must be devoted to anatomy, pathological anatomy, histology, etc.; and it cannot be maintained that America has contributed much to these departments. At first it seems rather odd to find in a book bearing the title on the cover, *American System of Gynæcology*, nearly one-third of the text devoted to a compilation from German and English authors, copiously illustrated by excellent copies of the foreign plates. However, this volume is only one of four; and, moreover, the first page gives the proper title, as "*A system of Gynæcology by American authors*, edited by *Matthew D. Mann, A.M., M.D.*" It seems to us, therefore, considering the extent to which American gynæcology is dependent in its scientific basis and surgical evolution on foreign achievements, that it will be better and less pretentious if this great work be called "*Mann's Gynæcology*," rather than the "*American Gynæcology*." In this way we speak of "*Holmes' Surgery*," "*Ziemssen's Medicine*," etc., etc. As may be inferred from the reputation of the publishers, Messrs. Lea & Co., the material and mechanical execution of the work is excellent. Happily, the paper selected is not so polished as to tire the eyes, as is so often the case with American medical works.

However, these are mere matters of detail. The work, as it stands, is a treasury of information. It is preëminently a work which should be widely read by the profession. It contains both the life-experience of our able teachers, and an exhaustive synopsis of foreign works not elsewhere obtainable in English. A full index of authors and subjects completes the volume, and enhances its value.

CONNECTICUT MEDICAL SOCIETY. — ANNUAL MEETING,
MAY 26, 1887.

R. L. STRICKLAND, M.D., VICE-PRESIDENT, *Chairman*.

S. B. ST. JOHN, M.D., *Secretary*.

DR. CARMALT expressed his gratification at Dr. Cushing's very beautiful illustration, as being an exceedingly clear demonstration of the transition of adenoma (as the glandular hypertrophy that Dr. Cushing demonstrated, histologically is) into carcinoma, and as thereby confirming the views he had held and taught for many years. It is a further demonstration, if any were needed, of the correctness of the Thiersch and Waldeyer theory of the epithelial origin of carcinoma,—a theory now generally,

though not universally, accepted, but which is, as in this case, constantly receiving confirmation by investigations in the various fields of surgery and of pathology. Dr. Carmalt had not had the opportunity to study the development of carcinoma from an adenoma in this particular locality, but he had studied it so frequently in the external skin, had seen it developing from sweat-glands and hair-bulbs and sebaceous follicles, as well as from the Rete Malphigi, that the demonstrations of last night, by reason of the similarity of structure and arrangement, seemed almost familiar. Dr. Carmalt desired to refer to the illustrations as also indicative of the local origin of cancer, and the text of Dr. Cushing's paper, while not directly stating so, was capable of this interpretation, inasmuch as he referred to the well-known clinical fact of the liability of cancer to attack persons who have had old "unhealed erosions," — glandular hypertrophy, as Dr. Cushing designates it, — the illustrations showing just how this took place by the invasion of the deeper layers of the epithelium, under the influence of a long-continued irritative ("unhealed erosion"), into the connective tissue substratum. Our honored colleague, Dr. Emmett, has insisted upon the necessity in practice of making the incisions deep enough to get healthy tissues in apposition, so that union may take place; — that means, as we see by Dr. Cushing's demonstration, that the deeper layers of the glandular hypertrophy, the adenomatous new growth, must be entirely eradicated, or it will continue to grow, and, ultimately penetrating the deeper strata of connective tissue, take on the uncontrolled, unformed, immature growth characteristic of carcinoma.

The necessity of the careful removal of all tissues which may by any possibility contain the elements of a cancerous growth, *i.e.*, epithelial processes growing irregularly in the midst of connective tissue, extends, however, beyond the immediate locality. Billroth first formulated the important difference between carcinomas and sarcomas, with regard to their generalization, *i.e.*, that, in the great majority of cases, the former generalized by means of the lymphatic system, and the latter by the blood-vessels. Now, we know that practically every secondary deposit is a focus for the further spread of the disease; and in this we see the necessity of enlarging the field of the operation beyond the part first affected, in order to search most thoroughly for any involvement of the neighboring lymphatic glands. In cancers of the breast this is so emphatically the case that all surgeons who are abreast of the times include a cleaning out of the axilla in their operations. It is not enough to say that one cannot detect any enlarged glands by palpation through the external skin; the skin must be cut through and the dissection carried down to glands them-

selves, before one can assure himself or his patient that "all disease has been removed." This is so emphatically the case that Dr. S. W. Gross, of Philadelphia, with whose work on "Tumors of the Mammary Gland" you are all doubtless familiar, told me that it was his general custom to make his first incision in the axilla, and clear that out before the removal of the breast. If the axilla could not be satisfactorily cleared out, he preferred to desist from the operation, to close up the axillary wound, and leave the breast untouched. — I beg the society to excuse this digression from the subject immediately under discussion. I only refer to it to emphasize the point Dr. Cushing has made, of the necessity of a thorough removal of all the diseased (hypertrophied) glandular tissues.

Dr. Storrs seconded the motion, and remarked: "I would like to ask Dr. Cushing a single question, suggested in part by the remarks made by Dr. Carmalt. I believe with Dr. Carmalt that, in excision of the breast for carcinoma, good surgery demands that the glands and the lymphatics should be thoroughly removed, even if the dissection had to be carried to the clavicle. But I think that it would be easier to do this after the breast was removed. We cannot in carcinoma of the womb liken the operation to that of amputation of the breast, since we are unable to remove the affected vessels and glands beyond the disease. The question that I would ask Dr. Cushing is, if he would attempt the removal of uterine cancer for advanced cases?"

Dr. Storrs mentioned having recently seen a case — seen for the first time — where the vagina was infiltrated so that a digital examination could hardly be made. Could such a case, he asked, be one where an operation would be justifiable? He said that in his experience he had seen no benefit in the operation for the advanced cases.

Dr. Ingalls added: "I most cordially agree with Dr. Cushing in the importance of early operation in these cases of malignant disease of the uterus, and believe that when uterine tissue only is involved, the removal early of the diseased structure affords the patient great relief, as well as prolongs her life; but I must take issue with him when he says that he advises operating where the cancer has invaded the cellular tissue adjacent to the cervix. It has been my experience in such cases that the very fact of operating seems to add a stimulus to the growth, which rapidly passes on to a fatal termination, and I believe that it is almost useless to attempt an operation unless you can get beyond the diseased structure into sound tissue. In these cases such a procedure is well-nigh impossible, for the cancer has generally so far infiltrated the vesico-vaginal and recto-vaginal septa, that to get anything like the whole of it away would involve the creation of fistulæ; and so firmly do I believe this that

my advice to all patients who come to me afflicted with cancer which has involved the cellular tissue about the uterus is *not* to have any operation ; and I believe they live just as long, and in the end are better off."

Dr. Nelson remarked : " Dr. Cushing was speaking of mitigating symptoms by excision of the cancerous cervix. In January, 1883, a woman, multipara, 39, had had repeated monthly hæmorrhages, very alarming, from some growth upon the anterior cervix. The entire anterior cervix was easily removed, there being a body, in some degree encysted, as large as a small egg, easily detached, but the whole anterior cervix was excised. The only fault was that we did not excise the posterior also, but it did not seem at all involved. The growth, we found, could be grossly classed as sarcoma, and the microscope revealed spindle-shaped and caudate cells, with nuclei. In April she had two hæmorrhages, a fortnight apart, not very troublesome, and no more. She had two years of comparative comfort, but in the year 1885 the rest of the neck and the fundus became involved, and she died February, 1886, more than three years after the operation. The neck was readily brought to the external vaginal os, so that a complete amputation could easily have been done. There was never after the operation any really troublesome hæmorrhage."

Dr. Avery stated the history of a case of his when the womb and the vagina and labia were involved in a hard cancerous condition ; a speculum could not be passed into the vagina, and the finger could barely be introduced ; the diseased mass felt exceedingly hard, and blood readily flowed upon manipulation. Examination per rectum revealed, implication to the recto-vaginal septum. Now, the question Dr. A. desired to present was : If, with these conditions, Dr. C. would advise extirpation by surgical operation ? Dr. C. replied that even advanced cases should not be excluded from possible surgical amelioration, although he would not advise rash interference with such hopeless cases as those mentioned by Drs. Storrs and Avery. The principle which guided him was that of removing, whenever possible, masses, which by foul discharges and eventual sloughing must render the existence of the patient miserable and disgusting to the last degree. Moreover, the absorption of the septic discharges from such masses directly injures the nutrition, and shortens the life of the patient. In most cases the malignant growth, although hard to the finger, can be scraped out with great facility by a sharp spoon ; and with a little practice it is very easy to feel when the spoon reaches the sound tissue below the cancer. Hæmorrhage is easily controlled by the thermocautery, if not too hot. An excellent way is to place wet cotton over the bleeding points or in the cavity left after scraping out the cancerous cervix, and then by plunging the thermocautery into the cotton re-

peatedly, to cook and steam the remaining cancer-cells, like clams in sea-weed. In this way the danger of perforating the peritoneum is avoided. The cavity remaining is then well cleansed by irrigation with 1 : 2000 sublimate solution, and packed with iodoform gauze or wool. The patients suffer little pain subsequently, and show no evidences of shock ; nutrition improves ; the cavity contracts rapidly and granulates well. For weeks or months they are comfortable and free from fetor, and when finally the relapse occurs it may again be susceptible of a pretty thorough removal, or it may occur in an internal organ. Pain and fetor are the two elements which render a cancer of the uterus so horrible to the minds of women. By an early amputation, if possible, or by thorough spoon-scraping and cautery at a later stage, these two elements are largely overcome. The operative procedure is thus justified while it is more imperatively demanded by the prospect and anticipation of materially prolonging life.

Dr. WATHEN, of Louisville, read an interesting report of a case of rupture of the uterus, the rupture extending from the os externum to the middle of the fundus, splitting the uterus half in two. The liquor amnii was discharged a week before the uterus was ruptured ; and the doctor suggested that the uterine tissues were in a condition of fatty degeneration, or there was some form of inflammation, for the contractions were too insignificant to otherwise have ruptured it. He advises laparotomy in all cases of complete rupture, and expressed no little surprise that there are well-known medical writers, and many good practitioners and surgeons, who refuse to acknowledge that abdominal section is the best and the safest treatment in rupture of the uterus. The operation adds but few dangers and removes many. In all cases the rent should be carefully sutured, probably by Säger's method, or the uterus should be removed by Porro's operation. Säger reports sixteen operations for Cæsarean operation, with but one death, saving all the children. These operations were performed in the Maternity Hospital of Leipzig, and in the Dresden Maternity Hospital, by Säger, Oberman, Donal, Leopold and Carn. Of course he did not expect such results in general practice ; but timely operations by expert operators would result in a success of over 75 per cent. In conclusion, he suggested the substitution of some form of abdominal section for craniotomy in all cases where the child is living.

HOSPITAL REPORT.

FOUR CASES OF PELVIC ABSCESS, REPORTED BY F. L. BURT, M.D.,
HOUSE SURGEON, MURDOCK FREE HOSPITAL FOR
WOMEN, BOSTON.

CASE I.

Mrs. L— was brought to the hospital for treatment by her physician, Dr. Forrest, of Rockland, on Feb. 1, 1887. She is 28 years of age, married, and has one child, born in May, 1886, from which time dates her illness. The labor was tedious and very painful, and towards the last she was said to have swooned during the pains. It was found that the child could not be delivered in the natural way; and so, in due time, she was anesthetized, forceps applied, and she was delivered of a large, healthy child. All went well, seemingly, till the third day, when she had a chill. There was evidence of inflammatory process going on, and the diagnosis of "pelvic cellulitis" was made. The formation of pus went on in a sac shut off from the abdominal cavity, and this became constantly larger until, at the end of ten weeks, it occupied the whole area of the abdomen. It was then decided to aspirate, and two gallons of pus were drawn off. Two weeks later an opening was made midway between the last rib and crest of ileum and at border of the quadratus lumborum on left side. Two gallons more of pus were removed at this time. Discharge from this opening was said to have taken place off and on ever since, and on some days to the amount of a pint. With all this she has been slowly gaining. On Feb. 2 the cavity was sounded to the depth of twelve inches, the instrument passing into the right groin. On Feb. 3 she was etherized, and the opening dilated, the cavity being irrigated with a $\frac{1}{2}$ to 1 solution till it ran away clear. Considerable pus, quantity not measured, followed the dilatation. Depth of cavity found to be fifteen inches, sac separate from abdominal cavity. A single-current soft-rubber catheter was inserted, and a suture put in externally, to hold in place. Irrigation was done through the catheter and iodoform powder dusted on, and iodoform cotton applied to absorb discharge; bandages to hold dressing in place. Although there was considerable pus present at the time of operation, the subsequent dressings showed no pus whatever, and the cavity had been changed from a thoroughly septic condition to one entirely aseptic, in which there was no pus formation.

It was irrigated and dressed daily at first, and after five days the catheter was removed, and a double tube, six inches long, substituted. Dressed every

other day, and shortly every third and fourth day, the case did uninterruptedly well, and was discharged March 17. She returned to her family physician; and, at the expiration of six weeks, it was learned that the tube had been removed, and the opening entirely closed.

CASE II.

Mrs. H. M., colored, age 31, entered the hospital February 21, 1887. The following is her history, briefly. Has one child, 18 years old. There is nothing of importance and no record up to her present illness, which began five weeks ago. At that time she had pain in the pelvis, chills, and an extensive cellulitis was developed. Cause of illness unknown, and treatment, up to two months ago, unknown. At this time an opening had been made, by Dr. Bryant, of Cambridge, behind the cervix, and a single drainage-tube had been introduced, fastened externally to the body. Through this tube pus of very foul odor had been discharging in considerable quantities.

On February 25 she was etherized, and the cavity was explored. The sound was passed six and seven inches in different directions; the opening was dilated, and instruments passed, with as much force as thought wise, to open the several pus-pockets which were present. The whole cavity was then irrigated with a $\frac{1}{1000}$ bichloride solution, a double drainage-tube, six inches long was introduced, and the vagina packed loosely with iodoform-wool. The whole lower abdomen, which was very tense and of a cartilaginous feel, gradually softened down as the several pockets were freed of their contents, both at the time of the operation and at each subsequent treatment.

Dilatation of the opening, free irrigation, $\frac{1}{1000}$ or $\frac{1}{2000}$, through a double metal catheter; pressure over the abdomen, to break down the partitions and free the pus, was continued every day or other day, and the discharge gradually lessened during her stay. March 16 the tenderness and brawny feel over the abdomen had mostly disappeared, and the discharge had nearly ceased. She was discharged March 17, in a very favorable condition for final treatment at home.

CASE III.

Mrs. P., age 46, gives the following account of herself: There had never been any pain during menstruation until the last period, and she had suffered none to speak of except from the following tumors. Seven years ago she had one each removed from the arm and leg by a "cancer doctor," and they were said to be cancers. Thirteen years ago she had

a tumor called a cancer removed from the leg, in England; and seventeen years ago she had an ovarian tumor, removed, also in England. Nothing definite was learned about either operation; but the line of incision was present in all, and there was no return of any of the "cancers." At present she is suffering from pain in the lower bowel, pain on walking or standing, bearing-down pains, back-ache, constipation, and bladder trouble. Examination revealed no ovarian tumor, which, she thought must be present; but the uterus was found to be very much enlarged, and retroverted, the fundus being below the promontory, and the cervix behind the symphysis. There was pressure on the bowel, causing constipation, and on the bladder, causing irritability. A large, hard mass was felt posteriorly, supposed to be the fundus, and anterior to this was a soft, fluctuating point.

March 8 the fluctuating point was punctured with an aspirator-needle, and about three gills of pus drawn off. Without ether the opening was enlarged sufficiently to admit a drainage-tube. During the operation the cavity was irrigated with $\frac{1}{2000}$ sublimate, and the same was passed through the tube. A loose packing of iodoform-wool was made over the end of the tube. The wool was removed, and the cavity irrigated twice, the tube being removed at the end of a week. The case did uninterruptedly well, and was discharged March 23. Temperature never above normal after the first day.

CASE IV.

Mrs. L— is a Swede, 22 years of age, from whom, being unable to speak English, scarcely any history could be obtained. She entered the hospital April 12, 1887, having been sick the previous two weeks. She had an illegitimate child five months old, and had been married six weeks. She had not been seen, so far as known, by any physician until six days before entrance, when Dr. Bryant, of Cambridge, was called. He found her with the temperature 104° , in considerable pain, and sweating profusely. Temporary treatment was given, and arrangements made for her to enter the hospital.

Examination shows a tender, enlarged uterus, retroverted; the hard fundus being below the promontory, and a soft, fluctuating point anteriorly and just behind the cervix, which was found high up behind the symphysis.

After giving ether, a trocar was thrust in, and pus flowed freely from the canula. Then a large opening was made by the side of the canula with the Paquelin cautery, and through this opening a double drainage-tube was introduced, the cavity being irrigated with a $\frac{1}{2000}$ sublimate solution before and after the introduction of the tube. A loose wool dressing, with

iodoform, was placed over the tube in the vagina. The cavity was irrigated freely twice a week, the tube being removed and replaced at each treatment, until finally removed, in three weeks.

During this time there was about $\frac{1}{2}\%$ of albumen in the urine. The urine was examined on various occasions, and no casts or blood were discovered. A few pus-corpuscles were, however, present; and the source of the albumen was supposed to be connected with the absorption of septic matter. There was a small tumor, probably inflammatory product, to the left of the uterus, and in the broad ligament, for which nothing was done; and, as her mental condition was more suitable for an insane hospital, she was treated simply for the abscess, and was discharged to enter an asylum.

The foregoing short records necessarily do not show fully, upon reading the condition of the several patients; but they are cases both very important and interesting. They are brought together for the purpose of illustrating the following points. The strength of the solution used was $\frac{1}{2000}$ in cases I. and III. In Cases II. and IV. $\frac{1}{1000}$ was used for irrigation. This is a very suitable strength in the cases of this nature when there is no absorption, the fluid running off directly, and when you desire to remove the fetid condition as soon as possible. Cases II. and IV. show the necessity of opening all the pockets of pus, and making one cavity, so that the whole surface could be irrigated. This being difficult to do at first without a good deal more extensive operation, the septic condition could not be removed until after several irrigations, adhesions being broken down at each time. Case IV. shows the value of opening with the cautery at the point where the knife or trocar has punctured. There is no bleeding, and the opening remains so that instruments and drainage-tubes can be easily inserted. An important question presented itself in Case IV. as to whether the albuminuria was caused by absorption of some of the sublimate used in irrigation. It was concluded that this was not the case, because there were no other symptoms pointing to sublimate poisoning; there was free drainage, so that the irrigation fluid was not retained; at the end of the irrigations the strong solution was washed out of the cavity by a much weaker one. The albuminuria persisted when carbolic acid was substituted for sublimate in the irrigation. It was therefore decided to continue the sublimate injections.

ANNALS OF GYNÆCOLOGY

A MONTHLY REVIEW

OF

GYNÆCOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY.

EDITED BY

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BOSTON.

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Prof. W. G. WYLIE, "

NOVEMBER, 1887.

CONTENTS:

PAGE	PAGE
VAGINAL TOTAL EXTIRPATION OF UTERUS. <i>August Martin, M.D.</i> 49	Discussion on Papers of Drs. Martin and R. Jackson 51
STERILITY IN WOMEN. <i>Thos. More-Madden, M.D.</i> 62	TRANSLATION. — Total Extirpation of the Uterus through the Vaginal. <i>Martin</i> 52
CONSERVATIVE GYNÆCOLOGY. <i>Horatio R. Bigelow, M.D.</i> 67	PUBLISHERS' NOTICE 53
ENDOMETRITIS CHRONICA. <i>Leopold Meyer, M.D.</i> 75	TRANSLATION. — Report on Sixty Four Cases of Tumors of the Uterus. <i>Fritsch</i> 54
EDITORIAL. — American Gynecological Society, Vaginal Hysterectomy 79	The Latest View on the Treatment of Cancer of the Uterus. <i>Shant</i> 55
	Hospital Reports 56

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We refer to the Essay read before the International Medical Congress, at Washington in 1887.

Extract from Essay read before the British Medical Association at Brighton, England, 1886 By the Vice-President of the American Medical Association—(Discussion followed by leading members from Germany, England, and United States):—

"For the last four years I have been using, in the preparatory and after treatment of about 200 cases of surgical operations, a preparation well known as the Liquid Raw Food (MURDOCK LIQUID FOOD COMPANY, Boston). This I consider as one of the most valuable dietetic preparations within the reach of the surgeon. It is made of beef and mutton in the raw state prepared at a very low temperature, and combined with fruits which act as a preservative. The State Inspector of Food in Massachusetts, in his annual report for 1885, gives the following analysis of this preparation:—

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Extract from Essay read before the American Medical Association at Richmond, Va., by G. R. Shepherd, of Hartford, Conn.:—

"In presenting these cases, gentlemen, I have no pet theory to advocate, nor any hobby to ride. They are simple facts from my personal experience, in relation to the use of certain food extracts that I believe are not as well known to the profession as they should be, and in offering them to you it is with a simple desire to add a little to the general fund of practical experience and with the hope that some of you, at least, may find these foods of as much service in your daily practice as I have in mine."

Extract from letter in regard to Essay read before the American Medical Association at Washington, D.C., by B. N. Towle, M.D., of Boston:—

"GENTS,—In answer to your inquiry as to what form of Raw Food I used in obtaining the results reported in my paper read before the American Medical Association at Washington, D.C., I reply that I used several forms, but the one I relied upon was your Liquid Food.

"I am sure that a judicious use of your food will be the means of saving many valuable lives, and that no ethical sensitiveness as to the names of persons producing valuable combinations should deter me from stating the name of the preparations from which these results have been obtained.

Respectfully yours,

B. N. TOWLE, M.D."



Fig. 1.



Fig. 2.



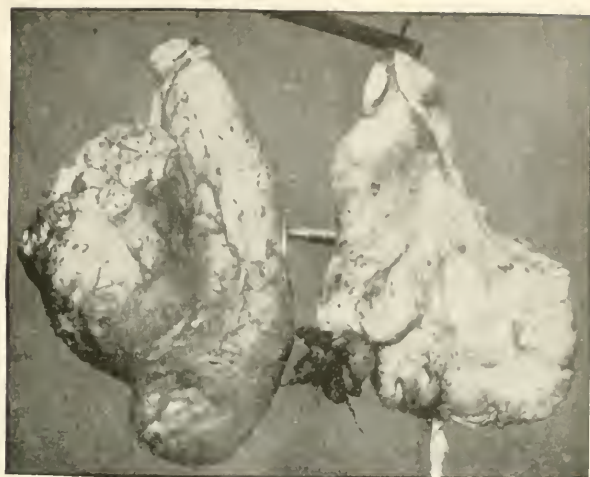


Fig. 3.



Fig. 4.



Fig. 5.



Fig. 6.



Fig. 7.



Fig. 8.

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THE VAGINAL TOTAL EXTIRPATION OF THE UTERUS FOR CANCER.

Translation of a Paper read before the Gynæcological Section of the Ninth International Medical Congress.

BY DR. AUGUST MARTIN, BERLIN, GERMANY.

TEN years ago A. W. Freund inaugurated the extirpation of the cancerous uterus; it may be supposed that sufficient material is at hand to decide the two following questions, which may legitimately be asked concerning every new method of surgical treatment:—

1st. Is this operation practicable, with such immediate success that it promises good results in the hands of others than a few specially successful operators?

2d. Does the extirpation of the cancerous uterus give permanent results which force us to recognize that this method is superior to any other treatment of cancer employed up to the present time?

In seeking to answer the first question, if we examine the literature we are struck with the fact that so meagre and isolated reports about this operation can be found in the journals of English and German medical literature. The fact must be recognized that the vaginal extirpation has obtained decided recognition in Germany. Here the purely vaginal operation of Czerny and Billroth and Schröder has been adopted in place of the procedure of Freund, which was a combination of abdominal and vaginal operation. The results of the same have improved in a very noticeable manner, with increasing exercise and experience.

In 1881 Olshausen collected 41 cases with 29 % mortality.

" 1883 Säger	" 133	" 28 %	"
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" 1884 Engström	" 157	" 20 %	"
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" 1886 Hegar	" 257	" 23 %	"
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Through the courtesy and kindness of these operators, who, to my knowledge, commanded the greatest amount of material, and who, at my request, placed at my disposal the results up to the end of the year 1886, I am able to construct the following table :—

TABLE I.

Up to the end of 1886 the following total extirpations have been performed on account of carcinoma uteri :—

Fritsch	60 times, with 7 deaths.
Leopold	42 “ 4 “
Olshausen	47 “ 12 “
Schröder [Hofmeier]	74 “ 12 “
Staudé	22 “ 1 “
A. Martin	66 “ 11 “
<hr/>	
Total	311 cases, with 47 “
	Or 15.1 %.

The total result accordingly shows of vaginal extirpation, on account of cancer of the uterus, in 311 cases 15.1 per cent. mortality; and are we not justified in assuming that this percentage of mortality will diminish with increasing experience, as shown by the improvement which may be easily seen in the published tabular results of each of these operators? Already, to date, the total extirpation of the uterus on account of cancer shows better results, so far as immediate mortality is concerned, than operation for removal of the breast for cancer.

For the latter, Küster, at the twelfth meeting of the German Surgical Society, in 1883, published 773 cases, with a mortality of 15.6 per cent., and who would hesitate to propose to perform the amputation of the cancerous breast as soon as the diagnosis is established?

I do not hesitate to answer my first question in the affirmative, and to claim for this operation of the vaginal total extirpation of the cancerous uterus a full and equal rank among all the methods for the treatment of cancer of this organ.

For the answer to the second question we will make use of the relatively small, but very accurately reported, cases of Schröder, collected by Hofmeier, and those of Fritsch, Leopold, and myself.

These cases are brought together in the following table :—

TABLE II.—*Permanent Results.*
TOTAL EXTIRPATION ON ACCOUNT OF CANCER.

Operator.	Number of cures.	OF THESE WE REJECT—					Remaining number of cases to be con- sidered in answer- ing question 2.	FREE FROM RETURN OF THE DISEASE AFTER—							
		Death.	Operated with- in the past yr.	In t current accidents.	Unknown.	Total.		1 year.	1½ year.	2 years.	3 years.	4 years.	5 years.	6 years.	7 years.
LEOPOLD. Personal communication ----	42	3	11	2	2	18	24	16	9	5	2				
HOFMEIER. (Schröder.) Zeitsch. f. Geb. u Gyn. XIII.	46	12			1	---	33	20	10	7	4	0			
									1 relapse, 4 ?	6 relapse, 2 ?	1 relapse, 1 ?	3 ? 1 apoplexy			
FRITSCH. Arch. of Gyn., XXIX.	60	7					20	17		7	2				
A. MARTIN. Berl. Kl. Woch., No. 5, 1881.	66	11	11			22	44	35	32	25	20	5	3	2	
								2 R. 1 ?	6 ? 1 phthisis.	4 ? 1 phthisis.					1 R.

TABLE II.—Continued.

Out of my 44 total extirpation cases, relapsed in the first year 9; of the remaining 35 there have been operated :

In 1880, 3—	Of these there are living (1886) after 6 years, 1; relapsed, 1; death from other causes, 1.	
In 1881, 3—	Do. (1886) do. 1	
	Do. (1885) after 5 years, 1	
	Do. after 4 years, 1	
In 1882, 8—	(1886) after 4 years, 2	
	Do. after 3½ years, 2; do. 1	
	Do. after 3 years, 2	
	Do. after 2½ years, -----	do. 1
In 1883, 5—	(1886) after 3½ years, 2	
	Do. after 3 years, 3	
In 1884, 8—	(1886) after 3 years, 4	
	Do. after 2½ years, 1	
	(1885) after 2 years, 3	
In 1885, 8—	(1886) after 1½ years, 6; do. 1	
	Do. after 1 year, 1	

These results, shown in Table II, prove that the permanent results of the vaginal total extirpation, in this relatively short period of observation, are, no doubt, equal to the best results of carcinoma operations of other organs.

Compare Table III for the results of the author.

TABLE III.—*Extirpation uteri vaginalis in healthy tissues, without reckoning the deaths caused by the operation.*

Year of the operation.	EPITHELIOOMA PORTIONIS VAG.		CARCINOMA COLLI.		CARCINOMA CORPORIS.	
	No. of cases.	There are of these—		No. of cases.	There are of these—	
		Healthy.	Relapsed.		Healthy.	Relapsed.
1880	—	—	—	2	1 ¹	1
1881	—	—	—	6	2	1
1882	—	—	—	6	2 ²	4
1883	—	—	—	2	2	4
1884	2	2	—	4	4	3
1885	1	—	1	8	6	2
End of year 1885	3	2	1	28	17	11
1886	1	—	1	7	—	1
1887	1	—	—	1	—	—

(¹) Died after 14 years from phthisis pulmonum.

(²) Died after 34 years from phthisis pulmonum.

(³) Died after 4 years from carcinoma ovarii, with a healthy scar in the roof of the vagina.

Up to end of 1885, operated, 44

Of these relapsed, 13 = 29.7 %

Recovered,

31 = 70.3 %

Is there any other method of treating cancer which, with so small a mortality, can show equally good results? There is no other method for treating cancer of the fundus, and those forms of diseases of the cervix in which the mucous lining of the cervical canal is the point of origin, or in which there are carcinomatous nodules in the tissues of the neck. There is no room for discussion, except in cases of epithelioma of the portio vaginalis, arising from the surface of the cervix; that is, from a surface covered with flat epithelium and containing very few glands.

This form, according to Ruge and Veit, and Schröder and Hofmeier, has a character essentially less malignant than the above-mentioned forms of carcinoma of the neck. According to Hofmeier the high excision for epithelioma of the cervix has shown a mortality connected with the operation of 7.4 per cent., and a recovery of 53 per cent. for the first year and 33 per cent. after four years.

That relapses are not prevented by this operation is expressly stated in Hofmeier's communication, and, therefore, it cannot be maintained that high excision is a safe means for treating this form of epithelioma of the cervix. My own experience in twenty-eight cases of high excision shows that six died under the influence of the operation, but all of the survivors relapsed in a short time; only a few lived to the end of the second year.

I agree with Fritsch that the observation of cases of progress of the disease in isolated nodules in the mucous membrane up to the fundus, in cases of carcinoma colli, as Binswanger and P. Ruge have described in very well marked cases, is sufficient in itself to show that it is erroneous to claim that in cases of carcinoma of the cervix we should try to save the body of the uterus.

The possibility of a subsequent pregnancy is not excluded in cases of high excision; but Hofmeier himself has declared that pregnancy is a very serious danger in cases of carcinoma; therefore I am convinced that it is much better to immediately perform vaginal total extirpation in these forms of epithelioma of the cervix. The sooner we operate the more surely we may hope to save our patients from the sad fate of death by cancer; the earlier we operate the better are the chances in reference to the general state of health of the patient in regard to recovery from the operation. The greater the experience with vaginal total extirpations the more has the *rule* been proved *that we shall perform the operation only when the vicinity of the uterus is entirely free from carcinomatous infiltration*. All attempts to enlarge the boundaries of the operation in this direction have failed. The operation becomes very much more difficult through such infiltration, the danger of the operation increases, and there can be no hope of permanent cure. The majority of operators,

so far as I can learn, have concluded, as I have, not to expose these cases to any attempt at a radical operation.

If the carcinoma appears in the form of a solid infiltration of the ligaments and of the walls of the vagina, then the diagnosis and the decision present no difficulties. The progress of the disease by means of the lymphatics is often impossible to discover before the opening of the roof of the vagina. Such cases, then, are not dangerous, so far as the operation itself is concerned, but hopeless in respect to permanent cure. They ought to be put in a separate column in summing up the permanent results of the operation.

Cicatrices on account of former inflammations in the floor of the pelvis may make the procedure extremely difficult and aggravate the prognosis through the shock of the operation, which is often very serious. At any rate, one should only venture to operate on such cases if there is a very strong indication for interference, and a reasonably great experience on the part of the surgeon.

The technique of the operation itself has undergone only immaterial changes, as is shown by the results of different operators using various methods. It is irrelevant whether the uterus be removed by an incision made in front of, or at the side of, or behind the neck. It is of little importance whether hemorrhage be prevented by stitches introduced before the incision, according to my method, or whether each separate vessel be seized and tied as it bleeds. It is immaterial whether the uterus be turned over or removed by drawing it down and freeing it; whether the opening in the floor of the pelvis remain open, or be closed, or be drained either with the iodoform gauze or with a tube.

If it be easily practicable I advise that the ovaries and tubes be also removed. At all events, bleeding must be entirely stopped; during convalescence the parts must, as much as possible, be kept at rest. Washing out the peritoneal cavity does not work favorably. However the opening in the floor of the pelvis is treated, a smooth scar is finally formed, into which the roof of the vagina curves upward. If the patients do not become septic, or get any other complication, they make an extraordinarily easy recovery. They recover their color and strength, and, after the symptoms of the sudden change of life have been overcome, they seem to enjoy life fully. There is no observation showing that after removal of the uterus, with or without the tubes and ovaries, the patients lose their sexual feelings or their peculiar feminine form.

I recommend the vaginal extirpation of the uterus as the operation, as the means, which we ought to apply in cases of cancerous diseases of the uterus, as long as the disease is limited to the uterus itself.

THE MODERN TREATMENT OF CANCER OF THE UTERUS.

Abstract of a Paper read before the Gynæcological Section of the Ninth International Medical Congress.

BY A. REEVES JACKSON, M.D., CHICAGO, ILL.

DIAGNOSIS. While it is not commonly difficult to diagnosticate the presence of cancer in its more advanced stages, our knowledge of its beginning is lamentably deficient. Who can tell of the cause and nature of the transition from benign to malignant structures? After the change has taken place we may learn, by means of the microscope, that certain alterations have occurred in what were formerly normal typical cells, or at least that atypical cells are present; that other cells contiguous to those first affected become rapidly involved; and, still further, that at a considerable distance from these, and with healthy tissues intervening, may be found other atypical cells, each endowed with an aggressive tendency to influence its neighbors, and thus become a nucleus for the further spread of disease. Whence come those outlying germs? Have they been conveyed by way of the lymph vessels, or otherwise, from the part primarily affected, or had they a separate and independent origin? However this may be, the important fact to the surgeon is that such separated localities of disease may and do exist, and that during their earlier stages he cannot, either before or during operation, possibly know of their presence. This circumstance, more than any other, explains the frequent failure of operative measures to cure cancer; they fail to remove all of the diseased tissues.

Treatment.—In all cases of uterine disease in which the diagnosis of malignancy is doubtful the patient should be given the benefit of the doubt by the prompt removal of the disease, if this be possible. If radical treatment be delayed until an affirmative diagnosis can be positively made, the chances for success are greatly lessened. When we shall have learned to detect what I have no doubt exists, namely, a pre-cancerous or transition stage between inflammation and carcinoma, and shall have learned to act upon the knowledge, then, and not till then, shall we be able to cope, with some satisfactory degree of success, with a now dreaded and practically incurable disease.

Likewise, after the diagnosis of malignancy has been affirmed the disease should be removed, if it appear that this can be done. Any delay, dangerous enough in the doubtful or very early stage, is still more dangerous now. The disease from the beginning progresses, and there comes a time when it passes beyond our surgical reach.

Amputation by Galvano-cautery. — In 1882 Pawlik¹ published a report of 136 cases of cancer of the cervix which had been treated in the first gynecological clinic of Vienna by means of the galvano-cautery, the observations extending back to 1861. The mortality from the operation, although not exactly stated, must have been exceedingly small; apparently not over 3 or 4 per cent. By amputation with the hot iron, Schröder,² out of 13 cases, had an operation mortality of $7\frac{7}{10}$ per cent., and of the survivors 42 per cent. remained well at the end of 18 months to 2 years. Carl Braun and Simson cite the testimonies of patients who were operated upon in this manner, and who had continued alive and well for a quarter of a century.

Notwithstanding the theoretical advantages which have been claimed for the operation by the knife, the foregoing results have never been equalled, so far as I am aware, by any form of cutting operation, in any considerable number of cases.

Amputation by the Knife. — At the meeting of the Obstetrical Society of Berlin, held October 23, 1886, Hofmeier³ reported the number and results of Schröder's⁴ partial amputation of the uterus for cancer, and the results of total extirpation by the same operator. The report included all of the cases which had been operated upon from October 1, 1878, to October 1, 1885. During that period there were 118 partial amputations, with 10 deaths; mortality, 8.5 per cent.; and 48 total extirpations, with 12 deaths; mortality, 25 per cent.

In a subsequent report Hofmeier stated that, from December 31, 1883, to date of report, — that is, the later cases, — there had been 83 supra-vaginal amputations, with 8 deaths; mortality, $9\frac{6}{10}$ per cent. In these the result was doubtful in 19; relapses within 2 years, 35; or 42 per cent.; free from disease 2 years or longer, 21; $25\frac{4}{10}$ per cent. During the same period there were 35 total extirpations, with 9 deaths; mortality, $25\frac{7}{10}$ per cent.; result unknown in 6; relapses within 2 years, 15; $42\frac{8}{10}$ per cent.; free from disease 2 years or more, 5; $14\frac{2}{10}$ per cent.

In 1882⁴ Dr. W. H. Baker, of Boston, published the details of a method of high amputation devised by himself, and gave the histories of 16 cases in which he had employed it. This report was supplemented by another,⁵ showing the status of these patients in January, 1886. The remarkable and very gratifying results are as follows: 1 patient well 8 years after operation; 1 after 6 years and 2 months; 1 after 6 years; 1

¹ American Journal Med. Sciences, October, 1884, p. 665.

² Post, "American Journal Med. Sciences," Vol. XCI., p. 14.

³ American Journal Obstetrics, Vol. XIX., 1886, p. 27.

⁴ American Journal Obstetrics, 1882, p. 205.

⁵ American Journal Obstetrics, February, 1886, p. 184.

after 5 years and 3 months; 1 after 4 years and 8 months; 1 after 4 years. One patient died at the end of 4 months. There was no death immediately after operation. In percentages the results were 60 per cent. well 4 years or more after operation. Dr. Baker considers that after any operation for cancer patients cannot be pronounced cured until 4 years have elapsed without recurrence. The best reported results from other methods of high amputation show a mortality of $7\frac{3}{10}$ per cent.

Baker claims for this method over others the following, among other advantages: 1. More of the uterus may be removed; 2. The peritoneal cavity is not necessarily opened; 3. It gives a larger percentage of cures.

I have operated substantially according to the method of Baker 21 times. In 6 cases there was a recurrence of disease and subsequent death. In 4 cases the history is unknown after a few months.

Extirpation of the Uterus. — In the reasonable expectation that by the removal of the entire affected organ there would be greater likelihood of eradicating the disease, the cancerous uterus has been extirpated about 500 times,¹ approximately 150 times by the abdominal, and 350 by the vaginal method.

This number is now sufficiently large, and enough time has now elapsed since the revival of the operation by Freund, in 1878, to enable us to form a fair estimate of its value as a curative method of treatment.

Owing to the frightful mortality attending the abdominal operation — not less than 72 per cent., and probably considerably more — it has been abandoned, except in a comparatively small number of cases in which the vaginal method is inapplicable.

The mortality of Kolpo-hysterectomy, according to the statistics compiled by Dr. Post, is shown to be 27 per cent. in 341 cases. This is 1 per cent. less than the result of the first 29 operations, collected by Hegar and Kaltenbach, and published 6 years ago; and 2.4 per cent. greater than the result in 256 cases published by Mundé in September, 1884.²

The statement has been made that the mortality of the operation is steadily lessening year by year. While this may be true, these tables hardly show the fact.

In the case of a few operators improvement has unquestionably occurred, but it is by no means general.

¹ In addition to 93 cases collected by Kaltenbach, Duncan ("London Lancet," Jan. 31, 1885) cited 44 cases by the abdominal method; and Dr. Sarah E. Post ("Amer. Journal Med. Science," Jan., 1885) has collected 341 cases of Kolpo-hysterectomy.

² Since the above was written, Dr. A. Palmer Dudley ("New York Medical Journal" for July 9 and 16, 1887) has compiled a table of 66 cases by American operators. Twenty-three of the patients died within a week. Mortality, 34.8 per cent.

The only valid claim that can be made for the favorable recognition of Kolpo-hysterectomy is that it prolongs and saves life. Does it do this? In the 341 cases reported by Dr. Post there were 93 deaths. What is the significance of this fact? While we cannot know just how long these 93 women would have lived, if permitted, we can at least form an approximate estimate. According to the observations of Gusserow, Lebert, West, Seifert, and others, the duration of life in patients with cancer, from the first manifestation of symptoms, is 20 months. The statistics of Paget and Sibley show that cancer patients, without operation, are likely to die in 3 or 4 years. Accepting the lower of these estimates, these 93 women who died would have lived an aggregate of 155 years. A loss of more than a century and a half of human life must be charged at once to the account of the operation. What is there to offset this? Have other lives, otherwise doomed, been so prolonged as to balance this terrible debit? We shall see.

It has been shown that, in those who survive the operation, recurrence takes place on an average in about 4 months, and death in 14 months (Sanger),¹ so that the survivors of these 341 operations, numbering 248 persons, would live a total of 289 years; whereas, if uninterfered with, or treated only by palliative measures, they would have lived an aggregate of 413 years, — a difference of 124 years. This number, added to the 155, the immediate loss by the operation mortality, makes a total of 279 years. The history of surgery surely fails to furnish a parallel to this.

Even this ghastly arraignment does not cover all the facts. If the records were complete, the showing would be still worse.

I have for a long time believed that the statistics upon this subject are unreliable, and that if the whole truth were known the results of the operation would be still more unfavorable than they now appear.

In order to test the correctness of this opinion I have recently obtained the histories of 17 cases of vaginal hysterectomy for cancer which have been performed in Chicago; and I failed to get all of them. Except in 3 of the cases these reports have been furnished directly by the operators. All of them are authentic; of the 17 operations 9 were promptly fatal; one of the survivors lived 6 months; one lived 2 years; one lived 3 years and 8 months. The remaining 5 are still living; the operations having been done respectively, 7, 5, and 4 months, and one 5 weeks ago.

Of the 17 cases, with a mortality over 50 per cent., 2 only have been published.

I have already stated that in the survivors after Kolpo-hysterectomy

¹ Sanger; "Archiv. f. Gynäk.," XXXI., 1, states that in 6 cases observed by him the average time which elapsed between the operation and death was 14.1 months.

recurrence takes place in $4\frac{1}{2}$ months on the average. It is sometimes very much earlier. What besides the quickly following death does this signify? *First*, and undoubtedly, that the disease was not removed; that the so-called recurrence was simply continuance. *Secondly*, it ought to signify that it was not removed, because the operator was unable to diagnosticate its extent.

Is extirpation of the cancerous uterus a justifiable operation? I affirm that it is not.

It has already been shown that, as compared with other methods of treatment, hysterectomy, whether by way of the abdomen or vagina, has given inferior results. Its primary mortality is very much greater, and recurrence and death are as quick and as sure. Theoretically it would seem that extirpation should offer more certain immunity against return of the disease than any minor method of treatment; and if this were shown to be true in a considerable degree its larger mortality would scarcely be a valid argument against it. But the facts, so far as known, show that the reverse is true. Partial amputation by means of the galvano-cautery, or with the hot iron, or with the knife — the latter especially when followed by the use of caustics or the cautery — has given incomparably better results, both as regards the immediate death-rate and ultimate results, than ablation of the uterus.

When cancer is limited to the cervical mucous lining, the removal of the entire organ is surely not indicated. The excision of a conical portion, including the external os uteri and extending beyond the internal os, should be sufficient to remove all of the diseased tissue. In cancer of the cervix, for which at least 90 per cent. of the operations have been performed, it is really improper, because dangerous and unnecessary. It is four times more dangerous than any form of high amputation; and unnecessary, because owing to the fact that the extension of cervical cancer is circumferential, and not upwards, supra-vaginal amputation is capable of doing all that can be done by total extirpation at any curable stage of the disease.

This, then, practically reduces the field of the operation to cancer of the uterine body. The disease is much rarer here than in the cervix. Its progress is by way of the Fallopian tubes and the network of lymphatics which surround the organ on all sides. The difficulties of diagnosis are very great, and not likely to be settled until the disease has advanced beyond the limits of the uterus. Other conditions closely resemble it.

Dr. Martin, in the paper which he has read to us, propounds the following questions: —

"1. Is this operation practicable, with such immediate success that it promises good results in the hands of others than a few specially successful operators?"

"2. Does the extirpation of the cancerous uterus give permanent results which force us to recognize that this method is superior to any other treatment of cancer employed up to the present time?"

Dr. Martin does not hesitate to answer his first question in the affirmative, and, instead of giving the results of the work of the "others" in support of his position, he only furnishes those of the "especially successful operators" of Europe, — a method of argumentation calculated to mislead, because based upon only a partial presentation of the facts. This, at least, seems clear. If the 311 cases given in Martin's table show an immediate mortality of only 15.1 per cent., it follows that the mortality of the "others," which has been estimated at about 28 per cent., must be very much higher than has been supposed. Thus, Dr. Martin's statement of data seems to contradict the correctness of his conclusion.

In reply to Dr. Martin's question, "Is there any other method of treating cancer which, with so small a mortality, can show equally good results?" I answer unequivocally in the affirmative. Dr. Martin believes otherwise.

I beg to offer the following conclusions: —

1. Cancer of the uterus is originally a local disease, and is curable by complete removal.

2. Any operation for cancer which does not completely remove the disease will be followed by recurrence.

3. The extent of cancerous disease originating in any part of the uterus cannot be known prior to or during operation; hence no operative procedure can afford a guarantee of complete removal, or of immunity from recurrence.

4. In the radical treatment of uterine cancer the most favorable results, both immediate and remote, have been obtained by the amputation of the diseased portion by means of the galvano-cautery, the hot iron, and the knife.

5. Kolpo-hysterectomy is more dangerous, and has given worse results than any other method of treatment. It has destroyed, and has not saved, life. It is an injurious, and not a useful, operation. It is more rapidly destructive of life than the disease against which it has been used. Hence it should be condemned as unjustifiable.

ON THE TREATMENT OF STERILITY IN WOMEN.

BY THOS. MORE MADDEN, M.D., F.R.C.S., ED., DUBLIN.

Abstract of a Paper read before the Gynæcological Section of the Ninth International Medical Congress.

I. *Etiology of Infecundity.*—As in every other morbid condition, so in the treatment of sterility, our first aim must be to ascertain the cause of the trouble for which we are consulted, and our second object to remove this, if it be possible to do so. Of the various causes of barrenness, some, as, for instance, the absence or arrested development of the organs essential for conception, viz.: the uterus, fallopian tubes, or ovaria, being beyond remedial reach, need not here occupy our consideration. In the great majority of instances, however, sterility occurring in women within the limits of ovarian functional vitality, admits of effectual treatment when that treatment is rationally directed to the special exigencies of each case.

Stenosis of the Cervical Canal.—This is not only the most frequent of the causes of sterility, but is also, according to my experience, the most amenable to appropriate treatment of all the physical factors in the causation of infecundity. . . . Believing as I do that although dilatation or incision of the cervix may be successfully employed in many cases, either of these methods *per se* very often fails in permanently so far overcoming the natural contractility of the cervical structures as to prevent a recurrence of the stenosis. I now desire to call attention to a method of procedure by the use of certain instruments, by which the walls of the cervical passage are so forcibly and widely separated and torn, rather than cut apart, as to obviate risk of their speedy reunion and recontraction. (See full paper in Transactions of Ninth International Medical Congress.)

VAGINAL APHORIA.

In relation to the causes of sterility the condition of the vagina is a consideration of importance, it being obviously necessary for impregnation that this canal should be capable of receiving, retaining, and transmitting the seminal fluid. These requirements may be defeated by various abnormalities, congenital or acquired.

INFECUNDITY FROM VAGINISMUS.

Conceptive incapacity, or female impotency, is in many instances traceable to vaginismus or excessive sensibility of the vaginal orifice and

adjacent parts, attended with such spasmodic contraction of the sphincter vaginae as to form an impediment to marital intercourse. This occurs chiefly in patients of a hysterical temperament, and is generally occasioned by neuromata, confined to the parts supplied by the superficial perineal branch of the pudic nerve. From clinical experience I can vouch for the possibility, in many cases, of relieving the most intense dyspareunia thus caused, without any operative interference beyond the forcible dilatation of the vaginal canal, and stretching the pudic nerve implicated by the disease. The method of effecting this I have elsewhere described in a memoir, in which, whilst giving primary importance to local treatment, I at the same time laid stress on the importance of conjoint employment of topical measures with that constitutional sedative treatment which is always indicated in these cases, as in all other local manifestations of constitutional, nervous, or hysterical disorder. In some instances, however, these means fail, and we must then fall back on Sims' or Emmet's operations for the cure of vaginismus. It, however, sometimes happens that even in cases of vaginismus so intense as to render complete marital intercourse impossible, the disease is not necessarily a barrier to impregnation. Thus, in one instance under my observation, so extreme was the local hyperæsthesia as not only to preclude the possibility of complete cohabitation, but also to prevent the patient submitting to any local treatment for relief of the morbid condition. Nevertheless conception occurred, and I subsequently was called in to deliver her at full term, and in doing so was obliged to incise the still unruptured hymen by which delivery was obstructed.

STERILITY FROM UTERINE FLEXIONS.

The various displacements of the uterus by which sterility can be occasioned have been so fully discussed by recent writers as to render any lengthened reference to this point superfluous in this place. For my own part, I am inclined to think that a very extreme degree of importance is attached by Dr. Graily Hewett and his followers to the influence of anteversion and flexions in the causation of infecundity. In my own experience, at least, I have not often met with cases of sterility assignable to anterior derivations from the normal position of the uterus, and I have seen early pregnancy coexistent with the most marked antelexions. On the other hand, I have often traced sterility to retroversion, and again, and more frequently, to retroflexion, by the latter of which not only is the permeability of the canal mechanically constricted, at the point of flexion, but, moreover, as in cases of retroversion, and also of prolapsus uteri, the vaginal retentive capacity is necessarily interfered with. In each and all of these three latter conditions I have generally found the reposition and

maintenance *in situ* of the uterus by a properly adjusted Hodge pessary, *per se*, to be sufficient to cure the sterility thus occasioned. Nevertheless, the operation of opening by incision and dilatation the cervical canal is still useful, however, in certain cases of flexion of the uterus, with elongation of the cervix, where, from long-continued pressure at the angle of flexure, such an absorption of tissues has taken place as to occasion a permanent morbid condition incompatible with impregnation. In such cases the result of incising the cervix, which should always be divided backwards, is, as Dr. Emmet observes, to bring the neck of the uterus to a more natural length, and it then becomes straighter, shorter, and thicker.

ENDOMETRITIS AND STERILITY.

Chronic endometritis is incompatible with fecundity, and as long as that disease exists to any serious extent the patient must remain barren. This fact, to which I called attention many years ago, is one of great practical importance, and is too generally ignored in practice. I have known many instances in which patients were subjected to active surgical treatment to overcome some supposed mechanical obstacle to impregnation, and who, nevertheless, remained childless, no attention having been paid to the true and most frequent cause of sterility, namely, the existence of chronic cervical inflammation, on the subsequent cure of which pregnancy has followed. In such cases not only is impregnation obstructed by the viscid glairy secretion by which the os and inferior segment of the cervical canal is sealed in all cases of endocervicitis, but also, as Mr. Whitebread long since pointed out, the inflammatory action going on within the uterus, and which is liable to be aggravated under the states of venereal excitement, may prevent the formation of the membrana decidua; and the ovum, even though impregnated, is necessarily thrown off without any manifestation of its existence in the fertilized state. Secondly, the diseased condition of the lining membrane of the uterus may be extended to the fallopian canals, obliterating for a time their internal orifices, so as to oppose a complete barrier to the admission of the spermatic fluid within them, and thus to render the fertilizing effort abortive. Thirdly, the nature of the secretion furnished by the internal surface of the uterus or of the vagina, under certain states of the disease, may be inimical to the active existence of the spermatozoa, occasioning their destruction before they arrive at the extricated ovule.

I may venture here to reiterate two of the conclusions on this subject which I published fourteen years ago in the first volume of the "Dublin Obstetrical Transactions," and which have been confirmed by more recent experience, viz.: 1st. That a congestive hypertrophy of the uterus, and

more especially of the cervix uteri, is a very common cause of sterility; 2d. That these conditions were, in the majority of cases, occasioned by constitutional causes, one of the most frequent of which is the scrofulous diathesis; 3d. That these diseases require constitutional as well as local treatment; and I would again urge the benefits derivable in these cases from the use of the mineral and thermal waters of which I have elsewhere spoken.

OVARIAN AND TUBAL STERILITY.

Ovarian inflammation, manifested by soreness, tumefaction, and occasionally burning pain in the ovarian region, is one of the most frequent consequences and accompaniments of endometritis. In these cases the inflammation extends from the uterus, along the fallopian tubes, to the ovaries, and this to a great extent accounts for the fact I have just mentioned, that patients, whilst suffering from endometritis or endocervicitis, are invariably sterile. Moreover, in cases of endometritis the consequent salpingitis is generally attended by a viscid exudation, by which the tubes, and especially their uterine orifices, are mechanically sealed against the possibility of impregnation. Independently, however, of its frequent sequence on endometritis, tubal obstruction, productive of dysmenorrhœa and sterility, may also arise from those possibly graver, but, according to my experience, comparatively exceptional diseases, the frequency and pathological importance of which appear to me to be now strangely overestimated, and, in the treatment of which operative procedures, involving loss of all future conceptive ability, *i.e.*, the complete removal of the uterine adnexa, are so readily resorted to. In not a few cases I have seen all the supposed symptoms of pyosalpinx subside completely without any surgical interposition whatever.

It would seem to me quite as rational to amputate the breast for an ordinary mammary abscess as to remove the fallopian tubes merely because they may be the seat of serous or purulent exudations. In many cases of the latter there is, as I can vouch from clinical experience, no impossibility of reaching and removing the collection, whether a hydro or a pyo-salpinx by aspiration, or in some instances, by catheterization of the diseased fallopian tube.

Many years ago, having occasion to use the sound in a patient suffering from dysmenorrhœa and a long time sterile, I was surprised, there being no enlargement of the uterus, to find the sound pass in up to the handle, and that it had obviously entered the right fallopian tube. A year subsequently that lady gave birth to her first child, after eight years of married life. Since then I have repeatedly succeeded in accomplish-

ing what, in the first instance, was but a happy accident, and more than once with a similar result. Hence I invariably endeavor to impress, by clinical demonstration, on those who attend my hospital practice, the too generally ignored fact that the catheterization of the fallopian tubes, when employed by a practised hand, and with due caution, is a feasible, and, in some instances, may prove an effectual, method of treating certain cases of dismenorrhœa and sterility otherwise incurable.

Sterility may also arise from causes irrespective of any physical lesion. And although impregnation obviously in no wise depends on any sexual desire, still, unquestionably, it may be prevented by strong mental emotion and personal dislike, or even by sexual incongruity, which, in some instances, however, is not dependent on any aversion. Thus, in two cases, I have been consulted, after some years of childless married life, by ladies happily married, desirous of offspring, and not suffering from any physical disability, who informed me that though attached to their husbands, not only was there absolutely sexual indifference, but even positive repugnance to coition, which, in one instance, produced absolute nausea. In the latter case, I may add, that the last-mentioned symptom was allayed by the use of cocain suppositories before intercourse, and that ultimately pregnancy resulted.

Still more commonly is sterility dependent on sexual abuse or abnormal irritation, and hence the general sterility of prostitutes. It is hardly necessary to observe that in such cases a long period of abstention from all sexual stimulation affords the only hope of remedying the *impotentia generandi*.

In cases of infecundity, independent of any local disease, malformation, or displacement, or of any obvious derangement of the general health, or other tangible cause, and in which the mineral waters already referred to have either been tried without benefit or are contra-indicated, or not available, a course of sea-bathing is a prescription the efficacy of which in such cases I learned many years ago from a veteran obstetrician, the late Dr. McKeever. Why or how sea-bathing should have any special effect in this way I know not, but I can vouch for the fact that in many instances of sterility of long duration, the cause of which I had failed to discover or to remedy otherwise, impregnation has dated from a course of sea-bathing during a visit to Brighton, Bray, or some other seaside sanatorium.

CONSERVATIVE GYNÆCOLOGY.

BY HORATIO R. BIGELOW, M.D.

Abstract of a Paper read before the Gynæcological Section of the Ninth International Medical Congress.

1. THE history of medicine is a recapitulation of individual vacillation, of selfish egoism, and of unstable doctrines. The grand discoveries mark with red letters certain eras separated by years of time, and are connected rather with medicine as an exact science than with medicine as a practical study. The theories of yesterday are the superstitions of to-morrow, and the practices based upon such theories become the shuttle-cock of each doctor's battledore. This vacillation, and lack of coherence, is due to an entire absence of a definite and exact scientific logic of medicine. A new discovery in medical therapeutics is wont to become the ruling fashion, and so destroys whatever of actual merit it may possess by abuse and misuse.

A new surgical venture, meritorious in itself, and of permanent value in the hands of men qualified to adopt it, becomes almost criminal when it assumes a fashionable garb. The history of mankind is dotted all over with strange disturbances, both psychic and physical-religious frenzies, dancing manias, magnetic enthusiasts, spiritualistic delusions, alchemic dreams, and the like. As a chapter in this history, we find the same perversions running all through the growth of medicine up to this year of grace, when the fashionable gynæcological craze is abdominal surgery. It is very far from my intention to travesty so grand a department of the healing art. Measured by its results in the hands of intelligence it is the glory of modern surgery; but as a fashionable craze, carried into effect without exact diagnosis, and before the merits of a more conservative plan have been tried, practised by every ambitious doctor who desires to report a case, it becomes a dangerous procedure, if not absolutely criminal. I have been present, either as assistant or as invited guest, at a vast number of laparotomies, gastro-hysterectomies, and so forth, and all that I have previously written, and that which I write now, is deduced from actual observation and from much patient weighing of evidence. So, a part of the purpose of this paper is to show that certain enthusiasts have marked each era in the history of medicine, which are apt to become pernicious in proportion as they assume overruling predominance, and that abdominal surgery may fall under the ban unless it be restricted to its proper limits and to men competent to practise it. A second pur-

pose is to urge upon the profession the claims of "Conservative Gynæcology."

2. Surgery becomes conservative when it tends to alleviate suffering without resorting to operative interference. To deprive the human frame of any part of its component elements, no matter how small the element may be, not only robs it of a portion of some form of force, but disturbs as well the harmonious interblending of the forces originated by all of the other elements. An element weakened by disease works viciously, it is true, or, perhaps, not at all; but if we seek to restore it to normal we should not eliminate it altogether, but endeavor to heal the trouble, and thus restore the element to at least a measure of healthy action.

3. *What is meant by "Conservative Gynæcology."* — From what has gone before, it will justly be inferred that I mean by "Conservative Gynæcology" any plan that tends to preserve the just equilibrium of human energy, so far as this specialty is concerned, before resorting to means for the elimination of the offending organ, — any plan that offers reasonable assurance of alleviation from suffering, with a prospect of a measurable enjoyment of life, coupled with the ability to engage in moderate social requirements, with all the female organs intact, and without involving a risk of life. This is Conservative Gynæcology as opposed to Surgical Gynæcology. He who has watched the tendency of modern specialism during a decade of years gone by, or who has allowed himself to drift adown the stream that is full of the snags of frightful mortality, and muddy with the embryonic struggles of feeble pathology, will realize the importance of the issue. However great the shock to our personal vanity, the interests of humanity demand that we must realize the utter impossibility for us all to be Taits or Schröders, or Emmets and Keiths, or Peans and Slavjanskys. The value of any surgical measure is approximated by the aggregate of *all* results. If youthful ambition shall consider itself as competent to perform an abdominal section as any of these gentlemen whose names are the stars of modern surgery, pure, wholesome surgery must inevitably be brought into grave disrepute. Every man — I mean a large majority of the men who do successful laparotomies — rush at once to the "Journal" with an elaborate account of the operation. The same eager enthusiasm is not a marked characteristic if the result should happen to be unfavorable, and hence it becomes a longed-for goal of youthful aspirants, nay, even of older men, to have it recognized that John Smith has done five abdominal sections. What are the results? In nine cases out of ten the selfish end has been gained by the sacrifice of seventy-five per cent. of the women operated upon. Surgery is an enticing art, — brilliant, and covering with

fame the men who have done the most to make it so brilliant. It has a dangerous seduction, and unless the tide soon turns in the other direction, it will handicap itself with false disciples and shocking results. The work that John Homans has done in America is not merely the result of years of study and experience, but is the outcome of a special surgical type of man; and this may be said of Tait, of Keith, of Bantock, of Thornton, of Schröder, of Martin, of Sänger, of Leopold, and others. *Poeta nascitur non fit* will apply as well to the surgeon as to the poet. It requires something more than a mastery of anatomy to operate well, and for those who have not the peculiar gifts and characteristics that form an essential part in the make-up of the surgeon, there remains a field equally as large, and in which the results will be quite as brilliant. Somebody must do the work. The great body of Gynecologists are more competent to its successful accomplishment than they are to deal with abdominal sections; and he who battles with pain, conquers it, and carries the woman through life with all her organs intact, is quite as worthy of praise as the great surgeon who brilliantly removes the offending factor.

4. *General Medicine in its Relation to Specialism.*—I hold it to be axiomatic that no man can be a good specialist who is not conversant with general medicine,—not merely clinical medicine, but the science and art of medicine as correlated with physiology and pathology. Because a woman suffers with her pelvic organs, we are not to suppose that other parts of her economy may not be deranged from causes in no wise connected with the pelvic disturbance. Especially should he be familiar with the whole nervous apparatus, in conditions of health and disease. Restricted to its narrow limits, there are few medicines demanded for the treatment of Gynecological diseases pure and simple: but since the constitutional element is a factor necessarily involved in a consideration of the treatment of any rebellious concomitant part, we should be fully alive to questions of vascular irregularities, stomachic, cardiac, and hepatic troubles, and to the relaxing tendencies of certain diatheses. I fully believe that many female complaints which are primarily treated as Gynecological, and not always with signal success, would fare much better if the constitutional indications were first studied, for it not infrequently happens that the local manifestation is a mere symptom. Specialism should not be exclusive or narrow-minded, but expansive and liberal. The specialist should not only be able in general practice, but preëminent in his specialty. If we look at women as simply collections of pelvic aches and pains, or if we believe that a woman can *only* ache in her pelvis, and nowhere else, we are not worthy of a seat in this section.

5. *The Tendency to Operative Measures a dangerous one.*—I need

not dwell long upon this subdivision. I have already considered it, and that the tendency is a dangerous one few of us will deny. Who can begin to enumerate the number of cases in which the abdomen has been opened for supposed ovarian disease, when not a trace of anything pathological was discoverable? Who will write the history of the cases in which perfectly healthy ovaries have been removed, as an offending cause, without one shadow of improvement in the general condition of the patient? A human life mutilated, deprived of its distinctive characteristics, and rendered miserable! A human life poised between earth and heaven to gratify the bad diagnosis, faulty pathology, or personal conceit of an irresponsible practitioner! A human life *sacrificed to ambition upon the operating table!* Do you wonder, can you wonder, in the face of the grinning, horrid, damning facts, some of which are of record, and a host of which hide their ghastliness in dark places, that there should go out throughout the land a cry for conservatism? Can you, even in the halo of your own success as an abdominal surgeon, — a success which is deserved, and which the world recognizes, — can you for one instant look through statistics as a *whole* and not bewail the growing tendency to cut a woman up?

6. *Conservatism applied to the Treatment of Uterine Tumors.*

—In the twenty minutes allowed me it would be quite impossible to give a *résumé* of what has been published in this direction. I must presuppose that the literature is known to you. I should like to go into the subject more extensively, but time will not permit. Thomas Keith wrote to Dr. Mundé: "Look at it as you may, hysterectomy is a very risky operation, and the natural history mortality of fibrous tumors is practically *nil*. I have worked among them for the last thirty years, and that is my experience." ("American Journal of Obstetrics," September, 1886.)

It is quite exceptional, so far as my experience and observation is worth quoting, to find a tumor that actually endangers life. I have seen many hundreds of tumors, but the history of hemorrhage — dangerous hemorrhage — was rare, and I have only seen five uterine myomata which endangered life by reason of pressure. I have been present at over two hundred and thirty laparotomies for uterine tumors; but I am sure the operation, as an *absolute* necessity, was indicated in a small percentage of cases only. Most of these cases would have done well under electricity, and all of the submucous ones might have been treated with ergot without risk of life. Until conservative measures are exhausted I do not believe that we have any right to endanger the patient's life by operative procedure. Here, of course, will come in the question of the advisability of early operations. It may be predicated, first, that any

abdominal section carries with it a certain risk of life; second, no man can foretell the growth history of any tumor; third, only exceptionally does uterine myoma endanger life. In this class of adventitious growths I am strongly opposed to early operations, or, indeed, to any operation whatsoever, unless as a last resort to save life. My general conclusions in regard to this subdivision are:—

1. Many remarkable cures of submucous fibroids by the internal administration of ergot are of record, and hence the measure commends itself to Gynecologists.

2. The results from the employment of the galvanic current in *all* forms of uterine myoma are especially gratifying, and in electricity we have a most powerful remedial agent.

3. The constitutional, dietetic, and hygienic measures should be intelligently directed; these consist of tonics, aperients, good nitrogenous food, warm clothing, cleanliness, and fresh air.

4. Cutter's treatment should be tested further.

5. Early operations, in the case of uterine myoma, can only exceptionally be called for.

6. Dangerous hemorrhages are not the rule.

7. The percentage of tumors endangering life by pressure is small.

8. An operation should never be undertaken until the means above mentioned have been tested thoroughly.

9. Hysterectomies, myomotomies, and oöphorectomies are always attended with risk of life, and the danger should be pointed out fully to the patient beforehand.

We must now pass on to a consideration of subdivision—

7. *Conservatism applied to Tubal Disease and Inflammation of the Ovary.*—Through the medium of different medical journals I have upon several occasions endeavored to make clear my views upon this subject, citing cases in point which were under my immediate supervision. There are cases of pyo-salpinx, hemato-salpinx, and ovaritis, that will always demand the attention of the experienced surgeon, but it is entirely incorrect to assert that *all* such cases call for an operation. I could cite one instance, the details of which were published nearly four years ago, in which a perimetritis and retro-version complicated a moderate degree of salpingitis, in which there were the monthly pains of subacute peritonitis, painful locomotion, and an icterode discoloration, due, perhaps, to a spasmodic action of the gall-duct, which was handled entirely upon conservative principles, and with a very large degree of success. Pessaries were thrown away, because, with the tenderness around the utero-sacral ligaments they could not be tolerated, and glycerine tampons of cotton

were substituted. Turkish baths were ordered to make the skin more active. Rest treatment for eight weeks was carried out by Dr. Goodell in all of its details. Electricity was administered daily, with massage and Swedish movements. Later, cold bathing with vigorous rubbing was ordered, and this has been kept up ever since. The bowels are regulated by proper food and by deep massage over the course of the colon. Counter-irritation by iodine is sometimes applied over the ovary. Great attention is paid to the building up of the system by highly nourishing food at stated intervals. A few slight adhesions have given way to massage through the vagina. The patient now complains merely of some tenderness around the utero-sacral ligaments, which, singularly, becomes more pronounced at those mid-monthly periods in which, formerly, the abdominal pains were wont to manifest themselves so formidably. In other respects she is as well as most women. This case was seen by six different physicians of eminence, all of whom advised an operation. Dr. Goodell and myself always believed that it could be handled on the conservative plan, and the end has justified the opinion. I am very glad to have the opportunity of offering my tribute to this ἀναξ ἀνθρώπων, — this singularly able Gynæcologist, accomplished scholar, and Christian gentleman, — for I owe to Dr. Goodell much of whatever I may accomplish in this specialty, and indirectly it was he who first stimulated me in my studies upon conservatism. The only objection to such a course of treatment is: first, that it is expensive; second, it requires a long time and a great degree of patience to accomplish anything like a satisfactory result; third, the psychic and subjective condition of the patient must be watched and handled as carefully as her physical and objective symptoms. A private hospital and skilled nurses, a good masseuse and a competent assistant, are essentials. But that many of these cases go on to a good recovery by patient, observant conservatism, I know, from my own experience, to be an accomplished fact. There are some points in the pathology of pyo-salpinx which I confess I do not understand. Latent gonorrhœa in the male is, I take it, an accepted cause of most of these cases. Now, there is sent out during coition a germ, a gonococcus, that is capable of setting up degenerative changes in the tube. The product of this degeneration escapes into the abdominal cavity, giving rise to the subacute pains simulating peritonitis. Often this condition has existed a long time before the surgeon is called in. I cannot understand why the peritoneum and the lymphatic system should not become so thoroughly changed by the monthly, perhaps daily, contamination of these gonococci as to render an operation futile. If the tubes suffer so seriously, why should not other parts of the body, equally as sensitive, and in direct relation to the tubes, suffer to the same extent?

Do the germs die upon reaching the cavity of the abdomen? How long does the escaped pus retain its activity in the peritoneal cavity? How long a time would it require to render the peritoneum and lymphatic system so poisoned by contact with the germs as to make tubal extirpation of no use? I would also like to ask why it may not be possible, in some of these cases which dribble into the vagina, to catheterize the tube, as suggested by Dr. Kelly, and thus give free exit to the irritating fluid? It is not improbable that in the near future means will be found to reach the disease by medicines and local treatment. I am quite one with Dr. Coe in believing that vastly many more uterine appendages are removed than pathological changes require.

8. *The Relation of Gynæcology to the General Environment of the Patient.*—I can only give passing notice to an interesting class of cases that are well known to every Gynæcologist. I mean those of run-down women, who consult us for some uterine disorder. In these women, I am quite sure, that it is not the dislocated uterus which is to blame, but the every-day social demands, trials, and environment that must be studied. Immediate special interference is rarely accompanied with benefit; indeed, the nervous symptoms are often exaggerated by the shock to the modesty of a sensitive woman which an examination entails. It is clearly our duty here, first to win the woman's confidence, then so to adjust her daily life that she may be free from psychic disturbances and from physical drains. The rest treatment is here of superlative importance. No one, except she who may have profited from it, knows the blessedness of absolute bodily and mental rest, and few medical men who have not themselves witnessed the results will believe that it is possible to secure such euthymia. Muscular tire often makes brain tire, and muscular rest and inactivity will often hull into tranquillity the most active brain. Little by little, as the woman begins to realize that with the morrow's awakening there will not be the endless round of drudgery, the exacting demands of a household, or the many, many trials and worries which fall to the lot of some of our patients, she will cheerfully resign herself to the sweetness of being cared for instead of caring for others. She will cease even to think nervously of the duties she has separated herself from, and will appreciate from day to day the improvement that she is making. Time enough to take the uterus in hand later; but it sometimes happens that we will have no occasion to interfere locally. The offending organ has profited from the example set by the rest of the body. I have never been more impressed with the value of general treatment in Gynæcology than in the patients who were handled in this way. From an almost bigoted adherence to the doctrine that the constitutional disturbances were sub-

sidary to pelvic derangement, I grew to an appreciation of their significance as primary agents. It is true that amputation of the cervix will cure in fourteen days many cases of metritis, but it is equally true that electricity and general surveillance over the daily life of the woman will accomplish the result just as surely, and without any mutilation or risk of unpleasant sequelæ. It is also true that the surgical measure is not always effective, and its *modus operandi* is as yet questionable.

9. *Oöphorectomy for Epilepsy and Kindred Disturbances.*—I can scarcely believe that any surgeon would propose this measure for an essential epilepsy, uncomplicated with evident ovarian irritation. The argument, I take it, of the followers of Hegar is, that the peripheral irritation of the ovary is the starting-point. Hegar, himself, would not advocate oöphorectomy in *every* case of epilepsy; but how discriminate? It would also be an unsound argument to say that since we have no means of curing epilepsy in every patient, that, therefore, conservative treatment, as applied to women, would only be a waste of time. Every day that adds itself to the life of the ovary is important for better or for worse, and science is not yet in a position to assert whether this delay is wise or unwise. If there be epilepsies which are purely due to ovarian peripheral irritation, there must be something in the nature of the cause which we do not at all understand. One would suppose that cystic disease of the ovary would set up such necessary excitement, and yet it rarely if ever does so.

The operation for the relief of dysmenorrhœa is very questionable; for, in the first place, we are not sure that menstruation will be arrested, and, when so arrested, the pain may persist with as much severity as formerly. (See "American Journal of Obstetrics," Dec., 1886. Obstetrical Society, New York, "Persistent Menstruation after double Ovariectomy.") A more complete discussion of this subject than I have time to give it will be found in "The International Journal of the Medical Sciences," for Oct., 1886. A remarkable discrepancy of opinion existed in the opinions sent to Dr. Battey by the leading Gynæcologists. Some thought it indicated in suitable cases, but they fail to tell us the symptomatology and characteristics of these cases. Dr. Thomas thought it justifiable when the disease of the ovary could be made out clearly, and in this he shows clear-headed conservatism. On the whole, and in the present unsatisfactory condition of the whole matter, I would prefer to accept the conclusion of Sir Spencer Welles and of Dr. Emmet.

CONTRIBUTIONS TO THE MORBID ANATOMY OF CHRONIC INFLAMMATION OF THE MUCOUS MEMBRANE OF THE UTERUS (*ENDOMETRITIS CORPORIS CHRONICA*).

BY LEOPOLD MEYER, M.D. (COPENHAGEN, DENMARK).

Read before the Gynecological Section of the Ninth International Medical Congress.

I. THE INTERGLANDULAR TISSUE.

DURING the last half-score of years, since investigators have begun to take a more lively interest in the pathological anatomy of Chronic Endometritis, they have especially endeavored to draw up different forms of this disease. They formerly distinguished between a glandular, an interstitial, a mixed, and a vascular form; but it very soon became apparent that it was only possible in very few cases to classify the disease under one or other of these forms; nay, we often found in the mucous membrane of the self-same patient some parts that must belong to one of these forms, and others that belonged to another. In these investigations the inquirers chiefly took heed of the relations of glands, blood-vessels, and lymphatics, whilst but slight attention was bestowed on the more intricate construction of the interglandular tissue. Some, especially *Wyder*,¹ denied that Decidua-cells could be found in the mucous membrane of the uterus, except during pregnancy; others, chiefly *C. Ruge*,² assert that we can find them during the course of an Endometritis, especially that Endometritis which accompanies myomata uteri. *Schröder*³ lays down a form of Endometritis (*E. dysmenorrhoeica*) distinguished by peculiar symptoms, where there are strong bands of fibrillous connective tissue in the interglandular tissue. But, generally, the interglandular tissue is dismissed with such remarks as, that it, as usual, consisted of closely-packed cells with small, round, or spindle-shaped nuclei, that almost filled up the cell, — or some such expressions. *Heinricius*⁴ alone gives the following description, accompanied by a drawing, of the construction of the interglandular tissue in Chronic Hyperplastic Endometritis (*E. fungosa*): The stroma consists of a net of meshes formed by cells, with thin, star-shaped processes communicating with each other. The nuclei of these cells are irregular or triangular, 5–12 micromillimetre (μ) long, 2.5–5 μ broad. In the meshes there are two species of nuclei: large, oval, slightly stained ones,

¹ Arch. f. Gyn. Bd. II. Pag. 1–55.

² Ctrbl. f. Gyn. 1881. No. 12.

³ Zeitschr. f. Geburtsh. u. Gynäkol. Bd. X. Pag. 441.

⁴ Arch. f. Gyn. Bd. 28. Pag. 203.

often provided with a nucleolus, 7-15 μ long, 5-10 μ broad, and small, highly-stained ones, oval or spindle-shaped, the oval ones' diameter being 3.7-6 μ , that of the spindle-shaped 7-8 μ long, 3-4 μ broad.

The investigations, the results of which are given in this paper, have been made by me on parts of the uterine mucous membrane, scraped off by aid of Sims' Curette, and then laid as quickly as possible in absolute alcohol. They are then imbedded in Celloidin, the sections stained with Hæmatoxylin, with Hæmatoxylin and Eosin, with Lithion-picro-carmin, and Bismark brown, and they were then examined, either in glycerine or Canada-balsam-xylol. The patients on whom the curettings of the mucous membrane were performed suffered from severe metrorrhagia or menorrhagia. In one patient only was there a chronic catarrh, with considerable discharge, but no hemorrhage.

The interglandular tissue is generally seen formed by closely packed cells, so that the basal substance properly so-called, the stroma, is not visible, not even in very thin sections. Where the stroma is distinctly visible, it appears almost always structureless, with an irregular, delicate delineation, perhaps produced by the influence of the alcohol. But *I never saw anything resembling that described by Heinrichius*: a net of meshes formed by star-formed cells with thin processes that anastomose among each other. It seems evident from *H.'s* description that it is his opinion that this net of meshes is not a morbid inflammatory product, but that it is present in the normal uterine mucous membrane. But neither here have I been able to find anything corresponding to this reticular tissue. Of course it is much more difficult to get fresh *normal* uterine mucous membrane for investigation than pathological, and I have only had two normal specimens at my disposal, both of which were procured 6-8 hours after death. The one patient had given birth to five children, the last time one-half year ago, and was still suckling. She died very suddenly of Uræmia. The other patient, a girl fifteen years old, died of acute miliary tuberculosis during a catamenial period. The specimen from this patient was first treated with Müller's fluid and then with alcohol; the other specimen was immediately laid in absolute alcohol. The sections were stained and examined as above described. Notwithstanding a very careful examination, — also by aid of immersion, as *H.* recommends, — I did not, however, succeed in finding the net of meshes in these two specimens, nor do any other investigators mention it. In the not-menstruated patient the body of the mucous membrane is formed of cells so close together that no basal substance is to be seen, nor can the borders of the single cells be distinctly observed, notwithstanding several different methods of preparation, *nuclei only*, side by side, are visible. Most of

these are oval or spindle shaped (perhaps rather formed like bacilli, as they are nearly equally thick all along), the latter, as a rule arranged in strong bands. Perhaps many of the smallest oval nuclei are sections of the bacillus-shaped ones; these nuclei are stained rather deeply by all the different staining media. The diameter of the oval nuclei ranges from $3.7-5.9 \mu^1$ one way, $1.5-2.9 \mu$ the other way (generally $4.4-3.17 \mu$): of the bacillus-like ones from $5.9-10.3 \mu$: $1.5-2.9 \mu$. Among these nuclei we see a few little larger oval ones, that very much resemble endothelium cells. They are granular, become but slightly stained, have one or two distinct nucleoli, their diameter is $7.3-8.8 \mu$: 4.4μ . This find agrees in all essential points with the common description of the normal mucous membrane of the uterus. *Heinricius*² is not quite justified in asserting that the results of his investigations agree with those of *Leopold*. It strikes me that if one lays such a new and important discovery as *Heinricius*' before the medical profession, then one really ought to use better and safer methods than simple staining with Bismark brown and microscopic examination in balsam.

Whilst I therefore cannot agree with *Heinricius* in his statement, that the ground substance in the normal and inflamed uterine mucous membrane forms a net of meshes, I, on the other hand, perfectly agree with him that in Endometritis we nearly always find *the chief mass of the interglandular tissue composed of two different kinds of nuclei, or rather of cells*,—a discovery which former investigators, to be sure, have remarked, but without paying further attention to it.

In most cases of chronic endometritis we see in the interglandular tissue, (1) round or polygonal nuclei, slightly larger than a red blood corpuscle; they are brightly and generally evenly stained with carmine. Hæmatoxylin and aniline colors; seldom they are slightly granular. In those cases where we can see the corresponding cell protoplasm, it is homogeneous, and forms a narrow border round the nucleus, the diameter of the cell usually being only twice as large as that of the nucleus. I shall later on notice the modifications which these cells suffer. (2) Larger oval nuclei of granular nature, usually provided with one or two distinct nucleoli.

These nuclei are but slightly stained by the above-named staining media, so that the tissue, where these nuclei are in the majority, looks lighter, whereas it is darker there, where there are many of the cells

¹ I am well aware that the decimal fractions of a micromillimetre, such as 3.17 and 10.3 , are not and cannot be exact. But I have preferred to give them just as I have found them, and leave it to the reader to throw them off.

² L. cit. Pag. 204.

spoken of under (1). If the corresponding cell-protoplasm be visible, it is slightly granular, and the quantity of it is always much greater in proportion than around the first-named cells. These cells, which, let us say so at once, in their most exquisite form, have the greatest likeness to the so-called decidua cells, can, like the latter, have many different forms. I shall later on remark that we can also find other sorts of cells besides these two.

As stated above, *Heinricius* has also found these two kinds of nuclei, and he explains what he finds thus: That the large nuclei are the nuclei of the fixed cells of the connective tissue (endothelial cells); the small nuclei belong to immigrated lymph-cells. But I cannot agree with him in this explanation, for the following reasons: We found the tissue of the normal mucous membrane of the uterus composed of just those small cells with small, deeply-tinged nucleus, whilst the light nuclei were only present in small numbers, and did not by far reach the size they have in endometritis, or during the catamenial period. But even in the inflamed mucous membrane what he finds is not constant; it is possible, to be sure, although rare, to find an inflamed mucous membrane in which the interglandular tissue is formed almost exclusively of one kind of cells: small cells with a minute deeply-stained nucleus, whilst the light nuclei, which are also here, are proportionately few and small. Besides, we find in some patients distinct gradations between the two kinds of cells; nay, in some, the chief mass of the tissue consists of such cells, which we only with great difficulty can classify under one of the two sorts named. But during the catamenial period we find numerous large cells with large granular nuclei in the mucous membrane. I shall now review these points singly, and shall therefore, at the same time, endeavor to give reasons for the explanation which I, after my researches, think ought to be given to the above-named find, viz.: 1. *The round cells with dark nucleus are those cells which, in the healthy state, form the chief mass of the interglandular tissue.* 2. *The large cells, that resemble decidua cells, are formed from the former ones by irritative processes (endometritis, menstruation, pregnancy).* 3. *The cells named in 1 can also become more spindle-shaped.* They are constantly so in the closest neighborhood of the glands, but not seldom we find them spread and scattered about in the tissue, just like connective tissue-cells.

[To be continued.]

EDITORIAL.

THE AMERICAN GYNECOLOGICAL SOCIETY.

THE tenth annual meeting of this body was one of the most successful and brilliant yet held. The number of distinguished foreign guests present, the quality of the papers, and the interesting nature of the discussions, as well as the boundless hospitality of the Fellows resident in New York and Brooklyn, all combined to make the meeting for 1887 memorable, profitable, and agreeable.

It is difficult and invidious to single out a few papers as more worthy of attention than others; but, in considering the various subjects presented at the meeting, *including the discussions*, the following appear to have been the most important and instructive: Is salpingitis to be treated by extirpation of the tubes in all cases? by Dr. Wm. M. Polk, of New York. The treatment of the pedicle in supravaginal hysterectomy, by Dr. George Granville Bantock, of London. Alexander's operation, by Dr. A. Doleris, of Paris. The technique and treatment of uterine fibromata by electrolysis, by Dr. Georges Apostoli, of Paris. Battey's operation, its matured results, by Dr. Robert Battey, of Rome, Ga. Extra-uterine pregnancy and its treatment by electricity, by Dr. Ely Van de Warker, of Syracuse, N.Y.

The questions of salpingitis and supravaginal hysterectomy will be treated somewhat *in extenso* in our next number, with due reference afterwards to the other subjects above mentioned.

Dr. Battey was elected President for the ensuing year, when the Society will meet at Boston, on the third Tuesday in September.

The report of the committee of conference with reference to the formation of a Congress of American Physicians was received, but the recommendations of the joint committee were *not* adopted.

THE plates at the beginning of this number form one-half of the series of figures which illustrate the article of Prof. W. G. Wylic, which will appear in the next number of the ANNALS OF GYNECOLOGY.

VAGINAL HYSTERECTOMY.

AT the meetings of the Section for Gynecology of the International Medical Congress no subject excited greater interest, nor elicited more diversity of opinion, than that of vaginal hysterectomy for malignant disease. The views of Drs. August Martin and Reeves-Jackson were ably presented, and they will be found in this number of the "Annals."

together with the discussion on the subject, and also abstracts of recent addresses of Profs. Schauta and Fritsch, which fairly represent the consensus of the competent in Germany to-day. We have also felt that our readers would be interested in receiving a translation of the article on vaginal hysterectomy from the new edition of the work of Dr. Martin.

This distinguished author and surgeon was kind enough, during his brief visit in Boston, to give the Gynæcologists of this vicinity, as well as the honored guests who came for the occasion from New York, an opportunity of witnessing his method of performing hysterectomy. An account of the three cases on which he operated here will be found at the end of this number.

The gentlemen present felt that the operation is a difficult and dangerous one, even in the hands of Dr. Martin; much more difficult than Dr. Baker's operation for high amputation of the cervix, and, at any rate, in ordinary hands, more dangerous. The great source of peril is hæmorrhage. The shock is not very great, and the danger of sepsis is largely diminished by the use of antiseptic irrigation during the operation, and by free drainage of the pelvis, which can be easily secured. It is not an operation to be lightly undertaken, even by a skilful surgeon, without having previously witnessed its performance, without practice on the cadaver, without proper assistants, and, particularly, without proper instruments and needles.

The terrible mortality of the operation in America, to which Dr. Jackson so forcibly alludes, is attributable, we are convinced, to a lack of one or several of the above prerequisites.

As Dr. Dudley well pointed out in the discussion at Washington, the surgeons of this country are learning to do the operation, and every one must admit the peculiar difficulties attending a first case. Leaving out of Dr. Dudley's 66 cases the 11 which resulted fatally in first and only operations by 11 surgeons, there remain 55 cases by 22 surgeons, of which 26 were operated on by 4, and the remaining 29 cases by 18 surgeons. These 55 cases, 22 of which were first cases and 15 others were second cases, show altogether a mortality of 12, or a little less than 22 per cent. When we reflect that, according to Martin, up to 1884, 157 European cases as collected by Engström showed a mortality of 29 per cent., and, up to 1884, 257 cases collected by Hegar showed a mortality of 23 per cent., we need not doubt that the American operators, who are so situated as to perform a number of operations comparable to that of the surgeons quoted by Dr. Martin, will achieve equally brilliant results.

Dr. Jackson's disapproval of the operation induces him to reject it even in cases of the cancer of the fundus, on the ground of difficult diagnosis. Although, in just these cases, it is clearly the only procedure offering any

hope of relief, precisely these operations, as well as those where the uterus is removed for destructive adenoma, and other serious, although not really cancerous, affections, comprise a large proportion of the most difficult cases, yielding necessarily the highest rate of mortality. It is probable that, in hands of competent operators, cases apparently limited entirely to the cervix, and, therefore, suitable for treatment by the methods approved by Dr. Jackson, would, by such methods, give a mortality of less than 10 per cent. Fritsch lost 10 per cent. of all cases. Similar cases treated by the high amputation of the cervix have given an immediate mortality of about 7 per cent., so that where the operator may properly doubt whether he should resort to high amputation or total extirpation, he probably must subject his patient to the additional risk of about 3 per cent. in choosing the latter operation. Over against this stands the greater security against recurrence after the entire removal of the uterus, especially in cases where the affection unsuspected creeps up the mucous membrane from the cervix to the fundus. In just what proportion of cases the disease spreads in this manner is as yet unknown. It will soon be determined by the examination of the uteri now being removed by Kolpo-hysterectomy. It is probably much over 3 per cent. We feel assured that the consideration of the above facts, and of those so ably adduced by Drs. Dirner and Dudley, in Washington, will convince our readers that this operation does not deserve the severe censure which Dr. Jackson has applied to it.

Dr. Martin well pointed out in the course of discussion that the time had come for a more accurate classification of the conditions and results of the operation, and that, until these can be accurately accomplished, it is unfair in tabulating mortality of Kolpo-hysterectomy for cancer to include all fatal cases of all kinds. To sum up facts, the greatest danger in the operation is hæmorrhage, which even the most careful application of ligatures to the broad ligaments sometimes fails to arrest. In such cases it is well to remember that compression forceps may be applied to the stumps of the broad ligaments after the method of Pean, and allowed to remain one or two days without particular inconvenience.

In a later number we shall publish an article by Dr. Doleris, of Paris, calling attention particularly to this manner of arresting hæmorrhage during Kolpo-hysterectomy. We are happy to say that we hope that Prof. Baker will soon favor us with an account of the results, up to the present time, of high amputation of the cervix performed according to his method, which, as Dr. Jackson in his paper pointed out, according to statistics extending to two years ago, appears to offer the best results of the operations devised for high amputation of the cervix, both as far as concerns immediate mortality and subsequent immunity.

DISCUSSION ON THE PAPERS OF DRs. MARTIN AND REEVES-JACKSON.

DR. LLOYD ROBERTS, of Manchester, England, said that we were all deeply indebted to Dr. Martin for the able and satisfactory manner in which he had presented this subject, and for the great success which had attended his efforts, and we all hope that he will still continue to pursue the subject in the same able manner.

Dr. Dirner, of Buda-Pest, Austro-Hungary, said : —

Mr. President, Ladies and Gentlemen : —

Allow me to read my remarks on the papers read by Dr. Martin and Dr. Jackson yesterday, being unable to speak English fluently enough to be understood. To Dr. Martin's paper I would add a report of about twelve cases of total extirpation uteri. These I had occasion to see and to treat, as an assistant physician in the gynæcological clinic of Prof. Tauffer, in Budapest. We lost from our cases the first, which we did not perform after the method of Schröder-Czerny, and a second one of sepsis; all others performed by that method recovered, but the most only for a short time. — only two surviving now, after three and four years. In those two cases I remember very well the disease had been limited to the uterus. In some cases of relapse we could mark the bad prognosis for relapse already during the operation. In one of them disease of the kidney was the primary cause of death, as the post-mortem dissection showed. As belonging to the treatment after the operation I agree with Dr. Martin, that the best we can do is to let the wound alone. Considering so, we closed the opening in the floor of the pelvis, and filled the vagina with iodoform gauze.

Respecting the paper of Dr. Jackson, allow me to make the following remarks. He told us, yesterday, the vaginal total extirpation of the uterus is an unjustifiable operation, and alleged proofs for it. They seem for the first moment to be not only new, but fit to convince us. He told us, according to statistics from 1884, if I remember well, that from 341 cases died 93, who represent a loss of 155 years; from the survivals died also before the time fixed so many that they represent a loss of 124 years. totally a loss of 279 years! That is a weighty argument, which is without doubt new in its form, but I think incorrect according to its logic. I do not hesitate to declare that Dr. Jackson is on the wrong road when fighting with such statistics against the total extirpation uteri.

In statistics nothing is allowed but *quantity*; as soon as we have to do also with "*quality*" statistics are at an end. That is the first rule in statistics. Allow me to give you an example. On a ship there are 100 people in danger of death. I can save but one; all the others are lost. Shall I hesitate in saving this one? Surely not. The question is very clear; I have to do here only with *quantities*. But it is quite another affair if I can save this one or more persons only by strangling 25 or more with the saving-rope. There I must count already with a "*quality*," and that question I cannot decide by statistics, but only by meditating about morality and humanity.

The poor patients with cancer uteri, ladies and gentlemen, are such shipwrecked ones; they are condemned to death, — and what a painful death, too, dying day by day, week by week, month by month! They are no longer *quantities* only, they are *qualities* already. Such shipwrecked lives it is not allowed to cast into the scale and to argue with against the operation. The operation performed, we can save from 214 cases (Leopold 42, Schröder 46, Fritsch 60, Martin 66) 181, — more than 80 per cent.; 15–20 per cent. who died, died a short and perhaps painless death, instead of a long and painful one. All survivals after the operation can enjoy life for a short or long time; they have their life totally. And should we have saved but one life, and we can do it, we have done well. Those also who died in a short time, or in years, from relapse, after the total extirpation uteri, had good days; they had their health, and were free from the most disgusting things of carcinoma uteri, the discharge and the ill smell or worse. For those is the operation, if nothing else, — a short but continuous relief, a better one than could be given by any other medical treatment.

Concluding, I must say, humanity commands us to execute the total extirpation of the uterus, but by all means only in cases where we are sure, as much as it is possible, of being able to remove all morbid matter, and when we have at our disposition all the experience, skill, and technics necessary to that operation.

Dr. A. Palmer Dudley, of New York, said: —

It was with much pleasure that I listened to the papers upon Vaginal Hysterotomy, read before this section, at the morning session of yesterday, by Drs. Martin, of Berlin, and Jackson, of Chicago, clearly setting forth by well-chosen words and arguments their views and experience with this form of operation for malignant disease of the uterus. It may possibly be presuming upon my part, as a younger man in the profession, to attempt to offer any remarks upon the subject: but, being deeply interested, I beg the privilege to be allowed to utter one plea in favor of vaginal hysterectomy in America, and, if possible, to point out why the mortality following that operation has been so great, and especially so much larger than in Europe. True, the statistics of operation in America would seem to indicate that the operation is an unjustifiable one, and as Dr. Jackson quotes from my paper, reporting 66 cases, 23 died; but he failed to give you the reason for this large mortality. In the 66 cases reported by Dr. Martin as having been done by himself there resulted 11 deaths, while in the 66 cases reported by myself there were 33 different operators, or an average of two operations for each operator, with a mortality for all of 34 and 8-10 per cent., and of that number (23) 11 were first and only cases, while the remaining 8 are credited to 4 operators, one of whom had made 5, two 6 each, and one 9 operations, while several of those lost were made as a last resort only. Now, we all know that experience is a good teacher, and that practice makes perfect; but, if Dr. Martin could have made his first operation as well as he made his sixty-sixth, such sayings as the previous would be sarcasm upon human experience and surgical skill; but such is not the fact, for as the child has to creep before it can walk, so has the surgeon to meet with many trials before he can possibly obtain that degree of manipulation, skill, and experience which will enable him to secure the best results with any surgical procedure for the relief of suffering. So that I claim that American surgeons have not yet had a fair trial.

Most assuredly am I a believer in conservatism in surgery; but not to the extent that while we wait for the operation to become justifiable we allow our professional brethren in Europe, by careful observation and experience, to pile up statistics of successful results, to which we can never afterwards attain, as is the case in ovariectomy,—an operation which originated in this country; and still at the present day our surgeons are almost flocking to Europe to see how it is done.

I would plead for a careful consideration of this operation in America for still another reason, which seems to me to be a valid one. That is the amount of suffering and manner of death from cancer of the uterus, for we all know that, after such an operation, if death takes place it is painless, and if the patient recover and has a return of the disease, its course is much more rapid and less offensive. For that reason it is to be recommended. Dr. Jackson, by an ingenious mathematical calculation, summed up a loss of life (from this operation) amounting to nearly three hundred years; but, if he could have summed up the amount of suffering that these poor creatures would have to undergo before the slow but gradual death relieved them, he could have easily run up what would seem to them to be thousands of years, and had before his vision many a woman who had not only become loathsome to all her friends and relatives, but actually loathsome to herself; and in many of the cases I have reported the patients have not only readily assented, but craved the operation. One patient, when told that she would surely die, and that such an operation seemed like murder, declared that she would ask no greater pleasure than to act as the star in such a tragedy if it would only relieve her suffering.

It is my belief that, so long as cancer of the uterus shall appear in America in the future, so long will Vaginal Hysterotomy be resorted to for certain forms of the disease; and may such operations so increase the operator's skill and experience that ere long we shall be able to show statistics equal to, if not better than, those given us by Dr. Martin, of Berlin.

Dr. Graily Hewitt, of London, said:—

That the whole civilized world, and the uncivilized too, were under obligations to Dr. Martin and his colleagues for their work in this line, they having advanced the operation to its present state. In a discussion in the London Obstetrical Society, a few years ago, the speaker was the only one who refrained from condemning the operation. He thought it should be done in carefully selected cases, and by skilful and experienced men.

Dr. Martin described his method of operation. (This is given below more in extenso from his work.)

Dr. Reeves-Jackson called attention again to the facts and statistics cited by him. [For a full comprehension of the scope of his arguments, see the full paper in the "Transactions of the Congress."] He asked Dr. Martin how he knew when the disease is limited to the uterus, except from the fact that it did not return after hysterectomy, saying, that Baker, by his high amputation, has 60 per cent. of recoveries.

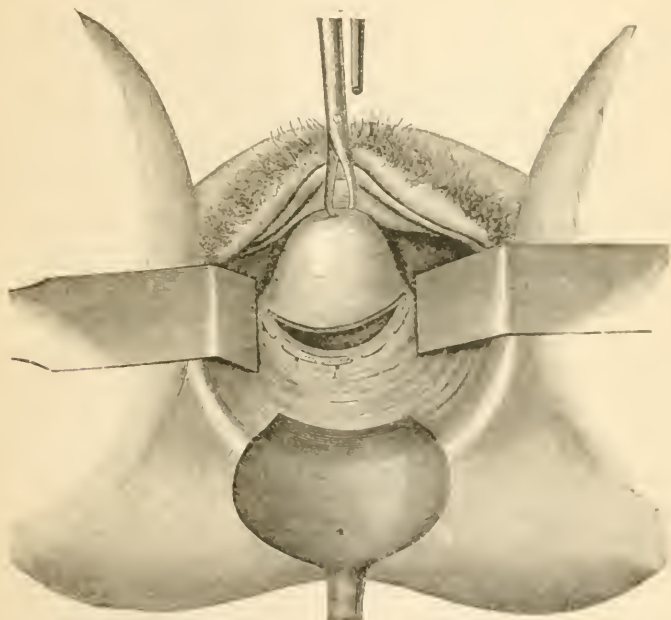
Dr. Martin replied that he knew that a cancer was limited to the uterus by its having a layer of healthy tissue about it, as proved by microscopic examination of the cut surfaces after extirpation.

TOTAL EXTIRPATION OF THE UTERUS THROUGH THE VAGINA.

BY DR. A. MARTIN, DOCENT IN THE UNIVERSITY OF BERLIN.

Translation from Second Edition of his Handbook.

My method for vaginal extirpation is as follows: After a complete disinfection of the vagina by irrigation, and a thorough emptying of the bowels, the patient is placed in position lying on her back and hips, and is brought under the influence of chloroform. The vault of the vagina is exposed by means of a speculum and side-pieces; then the cervix is seized with bullet-forceps on its posterior border and drawn forward as far as

Fig. 1. Opening into Douglas' *cul-de-sac*. Sutures through the vaginal wall.

possible towards the symphysis pubis. In this way the posterior arch of the vagina is stretched, so that the insertion of the vagina in the uterus can generally be well determined. Then I make an incision through the entire extent of this insertion, in order to advance into Douglas' *cul-de-sac* as quickly as possible. If the attachment of the wall of the vagina to the cervix has not developed very thick, then the opening of Douglas' *cul-de-sac* is generally secured by the first cut. But if, however, the mass of tissue which must be cut through is very thick, then this penetration will be very difficult and troublesome, and, indeed, it is the more so the more

we must advance towards the uterus in order to reach the limits of this attachment. When the opening into Douglas' *cul-de-sac* has been attained, I enlarge the cut so that the forefinger of my left hand can enter, and then with a small needle, which is very much curved, I sew around the entire extent of the border of the cut in the vagina. (V. Figs. 1 and 2.)

The needle is thrust through the vaginal wall to the forefinger, which at this point presses forward the peritoneum, which it now includes, and comes out again into the vagina about a centimetre from the point where it entered. Of such sutures I generally use four or five, which unite the

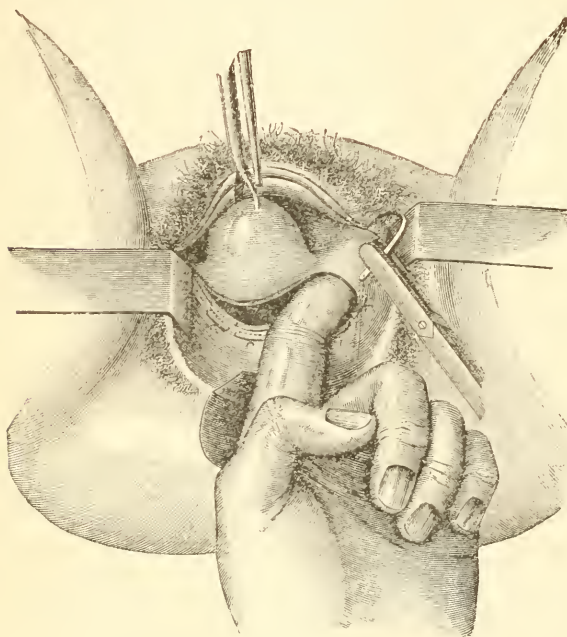


Fig. 2. Sewing the floor of the pelvis.

peritoneum of Douglas' *cul-de-sac* to the vaginal wall, and all bleeding at this point is stopped. Opposite these sutures, if the uterus bleeds very much, I thrust a single great needle through the cut surface of the uterus, and secure thereby a restraint against further trouble of the kind. It is only when the hæmorrhage is entirely stopped that the operation is further continued. If the opening of Douglas' *cul-de-sac* presents difficulties, and also if

there be considerable hæmorrhage, I sew in a similar manner the broad, cut surface itself to the vaginal wall before opening into Douglas's *cul-de-sac*, and then, while I draw this mass of tissue away from the uterus with the forceps, I force my way deeper and deeper along the posterior wall of the cervix uteri. The peritoneum appears like a delicate, glistening membrane, behind which there is sometimes a small amount of fluid. As soon as the opening has been obtained, then the union of the peritoneum to the vaginal wall is secured throughout the whole extent of the floor of Douglas' *cul-de-sac*, in the same manner that has been described. The hæmorrhage must always be completely controlled at this first stage of the operation before going any further.

Next I sew up the stump of the broad ligament, for which purpose I use large needles armed with a double thread, thrusting them from the vaginal wall toward that place on the side of Douglas' *cul-de-sac*, which my finger within presses towards me. (V. Fig. 2.) These threads must also unite the peritoneum and vaginal wall. Often it is impossible to draw out the needle again directly through the vagina, without first having thrust it completely through into the peritoneal cavity. In these cases I guide the needle-point, protected by my forefinger, through the open wound, out into the posterior part of the vagina, and while I hold firmly the eye of the needle with one hand, I secure the point of it with a second needle-holder. Only then do I take off the needle-holder from the end which has the eye; and now I draw the whole needle through, in order to thrust it, grasped anew, and again under the guidance of the forefinger, from the peritoneum towards the vagina, and to bring it out here about a centimetre from the point where it entered. These threads must be tied by using great force. Generally I use three on each side, by means of which I firmly unite the floor of the pelvis and the vagina as far as the anterior border of the cervix. By this union the vessels which pass through are secured with greater safety before they are cut.

The separation of the cervix from the floor of the pelvis as far as its anterior border, and the further stitching of the same, is often accomplished without any loss of blood. The knife is thrust directly forward along the cervix until, on both sides, this lies entirely free, *i.e.*, as high as the fundus. As soon as all hæmorrhage has been stopped, I cut around the anterior periphery while drawing the uterus forcibly backwards, and putting the anterior vaginal wall on the stretch. After cutting through the vaginal wall I push back along the cervix with my finger-nails that portion of the bladder which is united to the cervix, as far as I can discover such attachment. The extent of this attachment, and also the union of the cervix uteri to the posterior vaginal wall, varies exceedingly in different cases. Occasionally I have found it perhaps a centimetre thick, and in other cases it is five centimetres, or even more. Not unfrequently is it necessary to use the knife in order to separate the firmest bands of union. In this portion, also, we must sew, as exactly as possible, the separated surface to the vaginal wall, with small needles, which enclose the whole tissue directly under that surface of the wound which is next the bladder. Here four sutures generally suffice to stop the hæmorrhage, and for the restoration of the continuity of the vaginal wall. When the hæmorrhage has entirely ceased, I grasp once more the posterior portion of the uterus, which has been separated, and having determined the size and mobility of the uterus, I now seize its posterior lip with a Muzeux'

forceps in order to draw it forcibly forward. Into Douglas' *cul-de-sac* there is placed a Sim's speculum or a side-holder, and this protects the fundus, as it is drawn down, from catching on the posterior border of the wound. By obtaining, successively, fresh grasps of the Muzeux' forceps, I guide the posterior wall of the cervix and the fundus into the opening. If the uterus is freely movable, and is not much enlarged, this procedure does not offer many difficulties, while if it is very large and thick, this stage of the operation may be made exceedingly tedious. An advantage is often secured by pushing the cervix uteri up behind the symphysis pubis. In other cases, I have introduced into the uterine cavity an instrument [shaped like a stout, blunt urethral sound], and pushed the fundus down by this means. If the cervical canal is very narrow, the introduction of this instrument may be very difficult, but in this case it can be accomplished by splitting the canal. I like to avoid using this instrument, because the posterior wall of the uterus is generally bored through by it, and then the contents of the uterus escape on the surface of the wound. As soon as the fundus of the uterus has presented itself, it follows easily through the opening if the attachment to the pelvic floor has been sufficiently separated. In some cases this is attended with many difficulties which must be overcome by using the knife or scissors.

The further detachment of the uterus, in this inverted condition, is very difficult, especially on account of the excessive hæmorrhage which accompanies it. I isolate the insertion of the broad ligaments to the organ thus turned out, and display the tubes and that portion of the broad ligament lying near them, in order that I can tie this in one, two, or three segments, which I accomplish on both sides before I cut away the uterus itself. There still remains to be separated quite a thick mass of tissue at the sides of the lower segment of the fundus. The masses which appear easily accessible, after the separation of the insertion of the tubes, and of the attachments of the round ligaments, are first ligated (the one on the left side being done first), and sewed firmly to the border of the wound in the vagina, before they are cut through. The separation of the uterus from the bladder is easily accomplished if one always works close to the uterus with the knife or the scissors. In this case, also, I like to sew together the peritoneum and the vagina before completing the separation, and thereby do not allow the peritoneum to slip beyond my control.

Finally, the separation of the stump of the right broad ligament is attained. Here also the control of the hæmorrhage and the fixation of the stump is secured by sutures before the uterus is completely freed.

It is comparatively seldom, during the whole operation, that loops of intestines come down to the seat of operation, or into sight. If they do

become troublesome I lay a sponge under them, and thus protect them from injury.

The ovaries and tubes often come down into the wound, especially when they are much enlarged. In such cases I have ligated them, and cut them away without much difficulty.

As far as this stage of the operation a continuous irrigation of a weak solution of carbolic acid suffices for cleansing the wound. Only now do I make use of two or three small sponges in order to cleanse Douglas' *cul-de-sac*, and to make safe the edges of the wound by drawing over them out of Douglas' *cul-de-sac*, these sponges which are secured by long bullet forceps.

In my operations I have never yet seen excessive hæmorrhage following extirpation of the uterus.

Slight bleeding can be controlled by stitches put in afterwards, and then I insert into Douglas' *cul-de-sac* a thick drainage-tube which is held in place by a cross-piece. (V. Fig. 3.) I ascertain the condition of the bladder by a catheter, and then conclude the operation. For this purpose the outer end of the drainage-tube is turned back into the vagina, and then a large compress of cotton is inserted into the vagina to close up the large opening which gapes open considerably.

The duration of the operation varies very much according to the difficulties which are met with during the first stage, — the limit being between twenty minutes and two hours. The loss of blood is very small if the uterus is freely movable, and the peritoneum lies in a position relatively favorable, so that I have repeatedly seen hardly more than fifteen grammes lost in such cases. On the other hand, in some cases it can be very voluminous, even if the part has been prepared by continuous sutures. For a long time, however, I have not seen such hæmorrhages that threaten life. For the prompt control of this quite a considerable experience in using the needle is necessary.

The hæmorrhage is especially great if the neighboring tissues are diseased, whether there are old cicatrices from a former inflammation, or

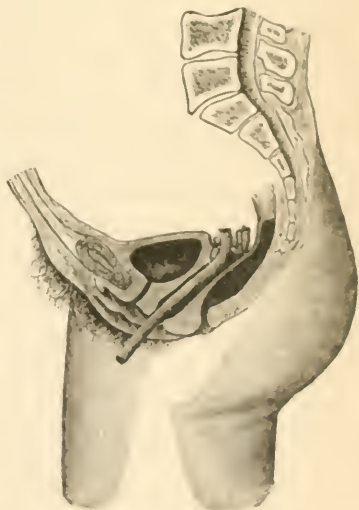


Fig. 3. Drainage after total extirpation.

a commencing infiltration. Perhaps the reason why I have not seen greater hæmorrhage of late is because I have been much more reserved than at the beginning in cases of such surrounding infiltration, and I am less ready to attempt total extirpation than I was formerly, and also, apparently, more favorable cases have come to me.

In these cases of excessive hæmorrhage I have usually been able to ligate the bleeding vessels, and many times I have sewed around the very limits of the pelvic floor with large needles.

PUBLISHERS' NOTICE.

WE take pleasure in presenting to our readers the foregoing translation from Dr. Martin's work, both on account of its great value in connection with the question of hysterectomy, and also as a specimen of his lucid and graphic treatment of his subjects. We are happy to say that, by permission of the distinguished author, we shall soon commence the publication of a translation of the whole work as a monthly supplement of 24 pages to the ANNALS OF GYNÆCOLOGY, separately sewed, although included in the same cover, at an additional annual price of one dollar, to such of our subscribers as specify that they desire the supplement. Those who do not desire it will receive the ANNALS in its present size. The translation as it appears will receive such additions and alterations from the author in the matter of statistics, etc., as the state of science may demand, forming the first authorized American from the 2d German edition. The 210 illustrations will not be mere copies, as in this number, but from electrotypes from the originals.

REPORT ON SIXTY TOTAL EXTIRPATIONS OF THE UTERUS.

BY PROF. DR. HEINRICH FRITSCH, BRESLAU.

(Archiv für Gynäkologie, Bd. XXIX. Hft. 3.)

SUCH a splendid contribution of sixty cases to the question of operation on the carcinomatous uterus is, especially when it comes from Fritsch, unquestionably of great value as an aid in clearing up different vital questions at issue; and, indeed, the reader will find much that is extraordinary in this concise essay which avoids any far-fetched conclusion. But to anticipate this at once, starting from Volkman's statistics concerning the recurrence of carcinoma of the breast, Fritsch had cured two cases surely, and seven in all probability. From this the exceedingly important fact becomes evident, that after total extirpation of the carcinomatous uterus, recurrence happens less often than after any other carcinoma.

The legitimacy of the operation no longer admits of the slightest question, and it depends on the practising physician to increase the chances of success by an early recommendation of it. For the direct mortality, which in these cases of Fritsch stands at 10.1 per cent., will surely be diminished to three or four per cent.

Fritsch does not make a sharp differentiation between a carcinoma of the portio and one of the cervix. In a carcinoma of the portio the disease always commences where the two kinds of epithelium join each other. By a carcinoma of the portio, one which increases downwards is implied, and by a carcinoma of the cervix that kind which penetrates crater-like into the cervix and parametrium. The former variety is most adapted for total extirpation. Like the majority of other operators, Fritsch objects to the high amputation of the portio, and favors total extirpation, whether the carcinoma appears to be one of the portio or of the cervix, and he emphasizes especially the contraction of the portio, *often* following the former method, as well as the difficulty of total extirpation after removal of the portio in case of subsequent recurrence.

The operation should be done only when the uterus can be well drawn down, and then one should not be frightened by tumors, even if they can be felt near by the uterus; for these tumors are not carcinomatous nodules. An incomplete operation does not mitigate the pain at all, and only hastens death.

Fritsch does not undertake any primary operation. In preparation the vagina and rectum are cleansed, and, in case the carcinoma has disintegrated, the loose masses are removed by a sharp curette. Fritsch's method of operating is well known. He begins by separating the parametrium on the side, while he advances by making shallow cuts, and stops hemorrhage by sutures. In this way blood is saved, and the uterus soon

becomes movable. Also, one will quickly determine whether there are any carcinomatous nodules in the parametrium, and can interrupt the operation without injury to the patient. And, finally, the most difficult part of the operation will be accomplished before opening the peritoneum. A great advantage consists in the fact that Fritsch, after cutting through the anterior attachment of the uterus, does not turn it out; but that he produces a marked antifixion by means of a hook inserted in one angle of the uterus, so that he draws this angle down and then ligates the stump of the broad ligament and cuts it off. He then accomplishes the same thing on the other side. If it was not possible to do so before, Fritsch removes the ovaries after removal of the uterus, in case they can be drawn down without much force. After sewing the stumps iodoform is used in the vagina, and an iodoform tampon left in.

If the uterus is very much enlarged, and if there is complication with myomata, and also, if it be impossible to pull down the uterus, which has been already detached on the sides, Fritsch accomplishes removal by laparotomy. He has done this once with success, and the woman continues well after one year and ten months. If the uterus be the size of a child's head, the bladder is easily torn by the force exerted in pulling the uterus downwards. On this account it is recommended in these cases to test the bladder by filling it with water after the operation has been completed, to determine this question. Fritsch has twice observed a spontaneous healing of a vesico-vaginal fistula made in this way. Once a ureter, which had been dislocated by a deformity, was ligated; and once after excessive loss of blood, salt-water was transfused with good result. Fritsch has observed two cases of recurrence, once in the cicatrix itself, and once in the parametrium. In the last case the cicatrix formed a swollen cone. The prognosis is favorable in those cases where the cicatrix is smooth and transverse. Fritsch has lost seven cases; for he operated on many cases of carcinoma, especially in the beginning, on which he would not now operate. — *Centralblatt für Gynäkologie*, 1887, No. 31.

THE LATEST VIEWS ON THE TREATMENT OF CANCER OF THE UTERUS.

BY PROF. SCHAUTA, PRAG.

Read before the "Central-Verein Deutscher Aerzte," in Bohemia.

PROF. SCHAUTA, after giving a brief history of the different operations performed for cancer of the uterus, with their results, and citing his own and the experience of others in vaginal hysterectomy, offers the following *résumé* of the subject:—

Cancer of the uterus can be radically cured. But we can only expect a radical cure when we are able to operate in healthy tissues. Furthermore, experience

teaches that with the incipient degeneration of the cervix the cancer makes rapid progress upwards towards the fundus uteri and towards the os uteri, and experience and fact have shown us that, though only a few isolated nodules may be found at the vaginal portion, some may already have formed at the fundus of the uterus, apparently quite independent of the others. Moreover, after amputation of one lip a recurrence is likely to take place in a different, higher portion of the uterus. Microscopically and clinically the diagnosis of the boundaries of the cancer is impossible; for this reason a radical operation is always indicated.

Those cases will, naturally, give the best results in which the operation has been performed at the earliest possible moment. I have said in my introduction that the question of the treatment of cancer of the uterus more than any other therapeutical question in regard to its future lies in the hands of the general practitioner. Many cases are brought to the operator very late. It is only possible to make such an early diagnosis by regarding every case of catarrh and erosion with suspicion, and by examining them very carefully as to whether we can discover somewhere a small nodule which must be regarded as cancerous. The age of the patient, hemorrhages, and inspection of the vaginal portion will teach us that such erosion will show some suspicious points. Such points have the following peculiarities: On the surface of the erosion we find a small nodule projecting which is dark red or yellowish red, bleeding very easily. I have observed several such cases of which Heitzmann has made some drawings. These nodules seem, at first, quite innocent; nevertheless, you will find therein, when excised, present under the microscope, all the characteristic signs of cancer of the uterus. The future of this disease will be better if we operate early. This, however, depends on our early diagnosis. In every case will the excision of a suspicious nodule be necessary. This is quite a harmless and painless procedure.

We come, then, to the following conclusion: Inasmuch as it is impossible both microscopically and clinically to ascertain the exact boundaries of the cancer, and at the first stage of the degeneration of the cervix the cancer has often made considerable progress in the uterus, we must perform complete extirpation of the uterus in every case.

Total extirpation of the uterus occupies, in a prognostic point of view, an exceptional position in comparison with the extirpation of cancer in other organs of the body. Cancer of the cervix spreads upwards very rapidly, but the surrounding tissues are affected at a late period, because, on account of the more advanced age, the circulation in the blood and lymph vessels is in most of these patients somewhat limited. Observation shows, however, that in young persons the cancerous degeneration is of an unusually malignant nature. The youngest case observed and reported by me was a young girl of 16 years, who had a very small nodule in the cervix. This person died a few weeks afterwards, but not from a recurrence in the uterus, but from a return of the disease in the utero-peritoneal glands. The connection of the uterus with its surrounding tissues through the lymph-channels is rather defective. Total extirpation of the uterus gives the best results of all total extirpations of the whole body. Winiwater states the best percentage of cases (*i.e.*, complete restorations to health) is obtained in cancer of the lips, namely, 40 per cent. Total extirpation of the uterus, however, gives 70 per cent. — *Pittsburgh*

HOSPITAL REPORTS.

TWO CASES OF VAGINAL HYSTERECTOMY FOR MALIGNANT DISEASES.
REPORTED BY F. L. BURT, M.D., MURDOCK FREE HOSPITAL
FOR WOMEN, BOSTON, U.S.A.

THE following cases were operated on by Dr. August Martin, of Berlin, in the presence of the following gentlemen: Dr. Redard, of Paris; Drs. Marion-Sims, Dudley, Lisle, A. W. Currier, of New York; Drs. Kimball, Irish, Fox, Parker, of Lowell; Drs. Reynolds, Baker, Marcy, Bolles, Elliott, of Boston, and other invited guests, and of Dr. Cushing and his assistants.

CASE I.

Mrs. F — is 48 years of age; has three children, aged respectively 13, 9, 7, and is a resident of Brookline. The history, of interest in this case, is briefly as follows: She began menstruating at 14 years of age, which flow was generally of one week's duration, was perfectly regular, and never had any pain. There was no difficult labors, and no evidence of trouble. She was perfectly well up to one year ago last March, when she began to flow profusely, which flowing lasted three months. From this time her physician controlled it with medicines until November. From then till the present time, about nine months, she has flowed almost constantly, having intermissions a few times of one week. She entered the hospital August 20, recommended by Dr. Channing, when she was seen to be in a very anæmic state, and suffered much from weakness and nervousness, but had no pain.

Examination showed an enlarged, heavy uterus containing a hard mass anteriorly, with blood oozing quite freely from the os, and no external evidences of disease. The vagina was thoroughly packed August 20 and 22, and the hæmorrhage in part controlled. August 24 the uterus was curetted by Dr. Cushing. A little iron was injected, and then well packed with cotton wrung out in sublimate solution and dusted with iodoform. Curetting by removing the diseased tissue had the effect of temporarily stopping the hæmorrhage, and she began to recover from the anæmic state. An examination of the specimens removed by curetting showed adenomatous degeneration of an inflamed, thickened mucous membrane. Patient was kept along, undergoing another curetting three weeks later, till September 19, it being considered best to perform vaginal hysterectomy. Operation was performed by Dr. Martin, after method described in his work.

Uterus was removed with some difficulty, owing to its large size, it

being 5 inches long, $3\frac{1}{2}$ inches across fundus, and weighing, after being in Müller's fluid, ix. oz. vii. dr. The anterior wall contained a softened and degenerated fibroid $2\frac{1}{2}$ by 3 inches in size. A photograph of the specimen, with account of the microscopic examination, will be given later. No hæmorrhage followed, and she has made a perfect recovery. Drainage-tube was removed in eight days, and vagina cleansed, after which the temperature, which had been $99\frac{1}{2}$ to 101° F., returned immediately to normal, and, with the pulse, has remained there. Sutures were removed in two weeks, when they were found very loose in the tissues.

CASE II.

Mrs. K —, of Newton, 39 years of age, has one child of six years. She was unwell at 16, and has never had any trouble at her menstrual periods. She had suffered somewhat with urinary troubles up to two years ago, when she is said to have had a growth removed from the urethra. Her condition three months ago, when she first entered the hospital, is described by painful micturition, considerable vaginal discharge, intra-uterine discharge, tenderness about pelvic organs, bearing-down pains, and flowing most of the time, if at work. Examination showed endometritis, leucorrhœa, slight cellulitis, and a suspicious reddish look of the cervix, together with hæmorrhage, caused not improbably by an internal malignant process. A piece was snipped from the cervix for examination, following which the uterus was curetted also for a microscopic specimen. Considerable soft, diseased tissue was removed, examination of which showed it to be cancer, confined mostly to the cervix, but affecting slightly the body. Patient gained sufficiently to be able to return home and attend to her duties, she being informed that further operation would be necessary in order to secure any hopes of permanent relief, it having been decided that she must have a thorough destruction of tissues or a total extirpation.

Nothing more was done about the case until September 19, when she was requested to return and have the Martin operation performed, as offering probably her best chance of recovery, and she reëntered on the morning of the operation. Operated at 1 o'clock, immediately following Case 1. No notable difficulty occurred during operation, except much hæmorrhage from stumps of broad ligaments after removal of the uterus. Dr. Martin put in several deep stitches or ligatures, applied with curved needles, and, although there was oozing from the track of the needles, the hæmorrhage seemed to be arrested. Patient came out of the ether well, but sank and died during the night at 4.30 A.M. Autopsy showed three quarts of fresh blood in the abdominal cavity. There had been no discharge of blood by the drainage-tube, and no particular symptoms by which hæmorrhage could be differentiated from the shock of the operation.

DR. MARCY'S PRIVATE HOSPITAL.

THE third case operated on by Dr. Martin in Boston was Mrs. C. ; age, 59 ; formerly consumptive, but had recovered. Healthy as a girl ; menses at 17 ; full growth attained at 18 ; married at 23 ; five children ; ruptured cervix and perineum ; last child at 44 ; menstruation regular until 48 ; irregular until 53.

In May, 1885, patient was curetted for menorrhagia ; the endometrium was thickened and softened. Curetting was found again necessary in October, 1885, and again the following March. She was curetted for the fourth and last time, in October, 1886, when the contents and walls of the uterus were scraped until the organ was reduced to a thin sac. She began to flow again in January, 1887, and continued so to suffer until the hysterectomy, September 21, 1887, having a severe attack of menorrhagia early in September.

Although the vagina was roomy, and the large uterus was not adherent, yet Dr. Martin found great difficulty in turning the fundus out into the vagina. This was because the uterine walls were so soft and thin that the triple-clawed forceps repeatedly tore out, and it was necessary to depress the fundus with a stout urethral sound, passed into the cavity. By the help of this, and of firm pressure over the hypogastrium, the uterus was inverted, although torn. Some of the uterine contents escaped into the vagina, and, probably from this cause, there was an elevation of temperature on the second day to 102°. The vagina was thoroughly cleaned, and a satisfactory convalescence ensued, although it was a fortnight before the temperature became normal. The sutures were removed on the seventeenth day and various sloughy bits of vaginal tissue finally separated, when the temperature became normal, and full convalescence ensued. The uterus was large and soft, filled with villous growths, an exquisite specimen of adenoma. A description, and figures of the microscopic appearances, will be given later.

ANNALS OF GYNÆCOLOGY

A MONTHLY REVIEW

OF
GYNÆCOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY

EDITED BY

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BOSTON.

WITH THE COLLABORATION OF

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Prof. W. G. WYLIE, "

DECEMBER, 1887.

CONTENTS:

	PAGE
Explanation of Plates of Dr. Wylie's Operations, in November and December Numbers . . .	97, 98
REMOVAL OF UTERINE APPENDAGES. W. Gill Wylie, M.D. . . .	99
ALEXANDER'S OPERATION. J. H. Kellogg, M.D. . . .	107
SHORTENING THE ROUND LIGAMENTS. William Alexander, M.D. . . .	116
OBITUARY.—Death of Dr. Edward Pritzl . . .	119

	PAGE
SHORTENING THE ROUND LIGAMENTS. William L. Reid, M.D. . . .	121
EDITORIAL.—Alexander's Operation . . .	123
ENDOMETRITIS. CORPORA CHRONICA. (Con- cluded.) Leopold Meyer, M.D. . . .	130
Discussion on Dr. Diller's Paper concerning Alexander's Operation . . .	141
Hospital Reports . . .	142
Publishers' Notice . . .	144

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The only Essays read before any National or State Medical Society on the value of Raw Food or Condensed Raw Food were on MURDOCK'S LIQUID FOOD.

We refer to the Essay read before the International Medical Congress, at Washington in 1887.

Extract from Essay read before the British Medical Association at Brighton, England, 1888 By the Vice-President of the American Medical Association — (Discussion followed by leading members from Germany, England, and United States):—

"For the last four years I have been using, in the preparatory and after treatment of about 200 cases of surgical operations, a preparation well known as the Liquid Raw Food (MURDOCK LIQUID FOOD COMPANY, Boston). This I consider as one of the most valuable dietetic preparations within the reach of the surgeon. It is made of beef and mutton in the raw state prepared at a very low temperature, and combined with fruits which act as a preservative. The State Inspector of Food in Massachusetts, in his annual report for 1885, gives the following analysis of this preparation:—

" Albumen	14.10
Alcoholic Matter	1.97
Organic Matter	16.45
Ash	0.42

"At a glance it will be seen how much valuable life-supporting material is concentrated in it, and what great blood-making qualities it has. In May, 1885, I had the honor to report before the Connecticut State Medical Society 79 capital operations, in which I depended almost entirely on this form of alimentation, with only three deaths. The operations included a large range of surgical cases, all involving the integrity of life or limb, and including several of the rare and more difficult operations."

Extract from Essay read before the American Medical Association at Richmond, Va., G. R. Shepherd, of Hartford, Conn.:—

"In presenting these cases, gentlemen, I have no pet theory to advocate, nor any hobby ride. They are simple facts from my personal experience, in relation to the use of certain food extracts that I believe are not as well known to the profession as they should be, and in offering them to you it is with a simple desire to add a little to the general fund of practical experience and with the hope that some of you, at least, may find these foods of as much service in your daily practice as I have in mine."

Extract from letter in regard to Essay read before the American Medical Association at Washington, D.C., by B. N. Towle, M.D., of Boston:—

"GENTS,—In answer to your inquiry as to what form of Raw Food I used in obtaining the results reported in my paper read before the American Medical Association at Washington, D.C., I reply that I used several forms, but the one I relied upon was your Liquid Food.

"I am sure that a judicious use of your food will be the means of saving many valuable lives, and that no ethical sensitiveness as to the names of persons producing valuable combinations should deter me from stating the name of the preparations from which these results have been obtained.

"Respectfully yours,

B. N. TOWLE, M.D."



Fig. 9.



Fig. 10.

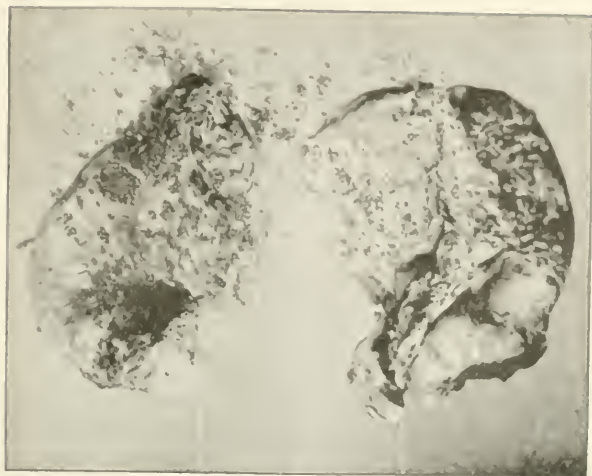


Fig. 11.



Fig. 12.



Fig. 13.



Fig. 14.





Fig. 15.



Fig. 16.



EXPLANATION OF PLATES

EXPLANATION OF PLATES. (November Number.) DR. WYLIE'S OPERATIONS.

Figure.	No. Case.	Date.	Age.	Married or Single.	Children.	Abortions.	Tappings.	Diagnosis.	Operation.	Drainage.	Results.	Remarks.	Proportion of the figure to life-size.
I.	56 Private.	June 12, 1886.	21	S.	...	...	...	Cystic degen., etc.	Removal of appendages complete.	No.	Recovered.	Local pain; bedridden for three years; hysterio-epilepsy.	$\frac{2}{3}$
II.	34 Private.	Nov. 16, 1885.	23	M.	...	...	...	Cystic degen.; ovary as large as a lemon.	Removal of appendages complete.	Yes.	Died.	Ovarian hematocele as large as an orange; hysterio-epilepsy of seven years; mind affected; died a raving maniac on fourth day after operation.	$\frac{2}{3}$
III.	14 Hosp.	Dec. 8, 1884.	31	M.	3	2	...	Pyosalpinx.	.....	.....	Recovered.	Both tubes occluded and adherent.	$\frac{2}{3}$
IV.	37 Private.	Dec. 23, 1885.	26	S.	...	1	...	Fibroid degeneration of ovaries.	Removal of appendages complete.	No.	Recovered.	Ovaries double their normal size; intense local pain; fear of insanity.	$\frac{2}{3}$
V.	69 Hosp.	Nov. 29, 1886.	26	M.	.....	.....	.....	Pyosalpinx.	Removal of appendages.	Yes.	Recovered.	Extensive adhesions to intestine, etc.; enlarged and hardened tubes.	$\frac{2}{3}$
VI.	54 Hosp.	June 3, 1886.	23	M.	1	...	...	Pyosalpinx, ovariitis.	Removal of appendages complete.	Yes.	Recovered.	Tubes adherent and occluded; left ovary centre of a pelvic abscess.	$\frac{1}{2}$
VII.	11 Hosp.	Oct. 6, 1884.	30	M.	1	3	...	Pyosalpinx, ovariitis.	.....	.....	Recovered.	Tubes enlarged, occluded; adhesions on both sides.	$\frac{1}{2}$
VIII.	.....	.....	.....	.....	.....	.....	.....	Pyosalpinx. After removal or escape of pus.	.....	.....	.....	.....	$\frac{2}{3}$

EXPLANATION OF PLATES. (December Number.)

DR. WYLIE'S OPERATIONS.

Figure.	No. Case.	Date.	Age.	Married or Single.	No. Children.	No. Abortions.	Tappings.	Diagnosis.	Operation.	Drainage.	Results.	Remarks.	Proportion of the figure to life-size.
IX.								Typical parovarian cyst.				To contrast with true cystoma and cystic degeneration.	$\frac{3}{5}$
X.								Typical ovarian cystoma.				To contrast with cystic degeneration of ovary.	$\frac{2}{3}$
XI.	39 Hosp.	April 3, 1886.	22	M.	1			Pyosalpinx, ovariitis.	Removal of appendages complete.	Yes.	Recovered.	Large, adherent, and occluded tubes.	$\frac{3}{5}$
XII.	33 Hosp.	Nov. 12, 1885.	22	M.	1	1		Pyosalpinx, ovariitis, pelvic abscess.	Removal of appendages complete, and sac of abscess.	Yes.	Recovered.	Abscess, size of orange.	$\frac{1}{2}$
XIII.	40 Private.	April 7, 1886.	27	M.		1		Pyosalpinx, ovariitis.	Removal of appendages complete.	Yes.	Recovered.	Ovaries as large as lemon, adherent and occluded.	$\frac{1}{2}$
XIV.	47 Private.	May 12, 1886.	33	M.				Pyosalpinx, ovariitis.	Removal of appendages complete.	Yes.	Died.	Quart of bloody fluid in two sacs; dense adhesion, marked intestinal obstruction, etc.	$\frac{1}{2}$
XV.	17 Hosp.	Feb. 28, 1885.	29	M.	3			Pyosalpinx.	Cystic ovaries.		Recovered.	Tubes enlarged, occluded; ovaries cystic, very adherent.	$\frac{1}{2}$
XVI.	64 Hosp.	Nov. 15, 1886.	27	M.				Disease of tubes and ovaries; hydrosalpinx.	Removal of appendages.	No.	Recovered.	Both tubes distended, size of wrists, with clear fluid.	$\frac{1}{2}$

ANNALS OF GYNÆCOLOGY.

VOL. I.

DECEMBER, 1887.

No. 3.

ONE HUNDRED AND TEN LAPAROTOMIES FOR THE REMOVAL OF THE UTERINE APPENDAGES. SIXTY-ONE CONSECUTIVE OPERATIONS WITHOUT A DEATH.

BY PROF. W. GILL WYLIE, M.D., NEW YORK.

FEB. 2, 1887, before the New York State Society, in a short paper giving a summary of my work in abdominal surgery up to Jan. 1, 1887; I reported 74 laparotomies done for the removal of the uterine appendages. Of these, 69 recovered and 5 died; but there were no deaths in the last 27. Since Jan. 1, 1887, up to Oct. 20, I have done 36 laparotomies for removal of the appendages; only the thirty-fifth case died. Adding the 27 of my former cases to the 34 of these gives me 61 consecutive cases without a death. (See Table.) Of the 36 cases, 20 were private, and 16 were hospital cases operated on in Bellevue Hospital: 25 were operated for subjective and objective symptoms sufficiently well marked to warrant the operation; 11 were operated upon for either painful or bleeding uterine fibromata. The hospital cases were, with few exceptions, selected from the patients of three of our largest dispensaries. Nearly all of the private cases were sent to me by professional friends from all parts of the country. A number of cases were sent to me for operation where the patients gave all the subjective symptoms of serious functional disturbance, if not of actual disease of the appendages; but, on account of absence of any positive objective signs of actual enlargement or disease, I refused to operate. There certainly are a number of cases where both local and general treatment fails to give relief to pain, and complete loss of health apparently due to disease or to a faulty action of the generative organs, and where, on examination, all we can find is an imperfectly developed antitlexed uterus with a prolapsed left ovary and a general condition of hyperaesthesia on both sides. The question is, in such cases, where all other means fail to give relief, Are we justified in removing the tubes and ovaries to put

a step to functional activity? Next, Does the operation really cure such cases?

It is in just this class that serious mistakes are made. The operation for the removal of the appendages should be done only in very extreme bed-ridden cases, after a prolonged and careful trial of other means of cure by more than one doctor.

In three or four well-marked extreme cases where I have felt justified in operating it has effected a cure, but it has not changed the delicate woman into a strong, healthy woman; but they are up and about, and are not pulled down on their beds by the periodical return of menstruation.

Of the 36, only 1 was a case of Hystero-Epilepsy. On examination I found a large cystic ovary the size of an orange; the other ovary was cystic, but not much enlarged; both were removed. The patient, when last heard from, had had only one convulsion, and seemed to be improving. I would not advise operation except in cases where the convulsions seem to have a direct relation to menstruation, or where there are unmistakable objective signs of local disease of the appendages, and in no case would I promise a cure by the operation.

In 2 of the 36 cases the tubes and ovaries were not removed, because after the adhesions had been broken up the tubes were found patulous, and the ovaries, to all appearance, were not seriously affected. In both, the fixation of the uterus caused by the adhesions prevented the tubes and ovaries being defined until the abdomen was opened. In both, the subjective symptoms were sufficient to warrant the risk of opening the abdomen. From the density of the adhesions and the peculiarly indurated roughness of the peritoneum covering the fundus, and the general enlargement and hardness of the organ, it was plain that the uterus had been the seat of a severe metritis, and that the peritoneum had become affected through the walls of the uterus, and not from extension of the disease into and through the tubes, as is nearly always the case. In both cases the ovaries were, to some extent, involved by the adhesions. In both cases the uterus was retroverted and retroflexed, and in both the functions of the rectum were seriously interfered with by the adhesions. Both were greatly relieved by the operation, and in one the displacement did not return after the operation. In both a glass drainage tube was placed behind the uterus, and kept there for several days. No attempt was made to sew the fundus to the abdominal wall.

In a third case, reported last January, in which the tubes and ovaries were not removed, the general condition of the patient was good; but she had been under treatment for uterine diseases for three or four years, and spent most of her time in bed, giving the subjective symptoms of

ovaritis. On physical examination the ovaries seem much larger than normal, and very sensitive. When the abdomen was opened the ovaries were held down by slight adhesions, the tubes were very vascular and unusually large, and both ovaries were studded by a number of recently ruptured cysts of ovulation, several on the exposed surface of each ovary. One or two of these were burst in getting up the ovaries, and they accounted for the increase in size. There did not appear to be sufficient evidence of disease to justify their removal; so they were dropped back and the wound closed. For a time the patient seemed better, but by mistake she was told that the ovaries had not been removed, and she was so provoked and troublesome that she had to be sent away from the hospital. The above cases raise the question: Are we justified in opening the abdomen to break up adhesions in those cases where enlarged tubes and ovaries cannot be made out by examination?

We must not forget that, in some cases of salpingitis, sometimes the most painful and distressing kind of adhesions are small, thicker than normal, but much shortened. Nor should it be forgotten that adhesions *per se* are not a disease, and unless they are attached to or compress a diseased organ or gland, or constrict a lumen of an organ and prevent normal action or performance of function, they do no harm. In severe cases, where the adhesions seriously interfere with the normal action of the intestines by constricting the lumen, I believe laparotomy is the best and only reliable means of making a cure. Breaking up by force by the use of uterine repositors is a method by no means free from danger, and utterly fails to give relief in many cases.

In two other cases, besides those related above, I have done laparotomy successfully for relief of obstruction by adhesions near the sigmoid flexure, which could not be reached *per vaginam*. In cases of adhesions of the tubes, if they are diseased enough to be occluded or distended with pus or other fluid, I think they should be removed when the abdomen is once opened.

Eleven of the 36 were operated upon for the removal of the appendages for painful or bleeding fibromata of the uterus. In 3 instances the fibromata were complicated by pyosalpinx and ovaritis. In 2 others the ovaries had small fibromata attached to or growing from them. As a rule fibromata are not painful, but they are not uncommonly complicated by inflammatory disease of the tubes and ovaries or endometritis. When there is associated fibroid degeneration of the ovaries, I believe the pain is due to this condition rather than to the fibromata. In 2 of the 11 the menstruation was not checked, although the tubes and ovaries were carefully removed. In both of these the fibromata were large and were intrauterine.

The 11 cases were selected from a large number that came to be operated on. In those cases where the uterine cavity was accessible, a thorough curetting rarely failed to completely control the hæmorrhage, and it was kept under control by repeating the curetting, if needed. As a rule the hæmorrhage is directly due to fungosities growing upon the endometrium; but in a certain number of cases, especially where the tumors are large, the uterine cavity is so tortuous that the curette cannot be made to reach the whole surface. In other cases the growth is rapid, and requires removal to relieve the symptoms. Since Jan. 1 I have done suprapubic hysterectomy 7 times for large, rapid-growing, and painful or bleeding fibromata, with only 1 death, and this one was complicated by syphilitic pyosalpinx. The tumors varied in weight from 10 to 28 pounds.

No. Case.	Date.	Age.	Married or Single.	No. Children.	No. Abortion.	No. Tappings.	Diagnosis.	Operation.	Drainage.	Results.	Remarks.
1	Jan. 24, 1887.	36	W.	2	..	..	Salpingitis and ovaritis.	Complete removal of appendages.	No.	Recovery.	Has had severe pain in back and left iliac region for four years, making her totally unfit for work; cystic ovaries and catarrhal salpingitis.
2	Jan. 31, 1887.	45	M.	1	1	..	Salpingitis, ovaritis.	Complete removal of appendages.	Yes.	Recovery.	History of peritonitis after miscarriage. Intestines very adherent to uterus and its appendages. Tubes occluded and much thickened, ovaries both very adherent.
3	Feb. 19, 1887.	35	M.	..	..	..	Salpingitis and ovaritis.	Complete removal of appendages.	No.	Recovered without bad symptom.	Had symptoms of repeated attacks of local peritonitis, and bedridden for three years.
4	Feb. 23, 1887.	26	M.	1	1	..	Cystic ovaries, salpingitis?	Complete removal of appendages.	No.	Recovered without bad symptom.	Both ovaries enlarged and prolapsed. Has always had dysmenorrhœa, which became worse after the birth of her child, so that she spends much time in bed.
5	Feb. 24, 1887.	35	W.	..	..	..	Uterine fibroids, pyosalpingitis.	Complete removal of appendages.	Yes.	Recovery.	Small fibroids on left side, posterior and anterior walls. Right tube contained pus. Both ovaries and left tube inflamed.

6	Feb. 28, 1887.	M.	1	No.	Ovaritis and salpingitis.	Removal of appendages on left.	No.	Recovery.	Left ovary cystic, size small orange; tube also enlarged and inflamed; right side normal.
7	March 5, 1887.	M.	...	...	Pyosalpingitis and ovaritis.	Complete removal of appendages.	Yes.	Recovered without trouble.	Both tubes enlarged, firmly adherent. Ovaries cystic, and rolled up in broad ligaments.
8	March 5, 1887.	M.	...	...	Salpingitis or disease of ovaries.	Complete removal of appendages.	No.	Recovered without bad symptom.	Small fibroid on uterus, and left ovary enlarged and very hard, having undergone fibroid degeneration. Intense local pain since miscarriage. Could not stand local treatment.
9	March 7, 1887.	W.	1	No.	Uterine fibroid.	Complete removal of appendages.	No.	Recovery.	For several years suffered greatly with pains in pelvis and thighs, and profuse and irregular hæmorrhage. Fibroid in posterior wall.
10	March 30, 1887.	M.	...	?	Pyosalpingitis and ovaritis.	Complete removal of appendages.	Yes.	Recovered.	Tubes occluded and strongly adherent with the ovaries and broad ligaments. Ovaries undergoing suppurative inflammation.
11	April 2, 1887.	M.	1	No.	Ovaritis and salpingitis.	Removal of left tube and ovary.	No.	Recovery.	Severe pain in left iliac region, especially during menstruation. Left ovary bound to mesentery and had a small hæmatoma attached.
12	April 9, 1887.	M.	...	...	Fibroids.	Complete removal of appendages.	No.	Recovered; no trouble.	For three years has been very feeble on account of severe uterine hæmorrhage. Cætering was tried.
13	April 13, 1887.	M.	2	?	Ovaritis.	Complete removal of appendages.	No.	Recovered; no trouble.	For past four years been in bed with symptoms of repeated attacks of local peritonitis. Under constant treatment. Uterus retroverted. Ovaries prolapsed, adherent, and enlarged.
14	April 16, 1887.	M.	4	No.	Ovaritis and salpingitis.	Complete removal of appendages.	Yes.	.....	After using vaginal injection ten months ago had symptoms of local peritonitis. Uterus bound down by adherent appendages. Left ovary cystic; tubes occluded.

No. Case.	Date.	Age.	Married or Single.	No. Children.	No. Abortions.	No. Tappings.	Diagnosis.	Operation	Drainage.	Results.	Remarks.
15	April 30, 1887.	32	M.	..	..	..	Fibroid tumor of the uterus complicated by salpingitis and ovaritis.	Complete removal of appendages.	No.	Recovered; no trouble.	Fibroid size of orange in posterior wall of uterus. Uterus, tubes, and ovaries matted together in bottom of pelvis. Tubes distended with mucus. Ovaries cystic. Five years practically in bed and under constant treatment for pain. Severe hemorrhages for several months. Very feeble condition.
16	May 5, 1887.	..	M.	0	0	..	Pyosalpingitis and cystic degenerated ovaries.	Complete removal of appendages.	No.	Recovered; no trouble.	Tubes contain muco-pus, adherent and occluded, ovaries adherent, and had cystic degeneration. Had worn pessaries for retroversion, but without much relief. Several attacks of local peritonitis lately.
17	May 28, 1887.	30	M.	..	..	No.	Uterine fibromata and cystic ovary.	Complete removal of appendages.	No.	Recovery.	Has had constant pain in left inguinal region for sixteen months; severer during menstruation. Has been in insane asylum for five months. Fibroids in anterior wall; right tube dilated and ovary cystic.
18	May 30, 1887.	..	M.	2	?	..	Cystic ovaries.	Complete removal of appendages.	No.	Recovered; no trouble.	Five years bedridden. Several months in a hospital; had cervix sewed up; had become an opium-eater.
19	May 30, 1887.	19	S.	..	..	..	Hystero-epilepsy; small ovarian tumor.	Complete removal of appendages.	No.	Recovery.	Ovarian tumor, size of orange, filled with dark, bloody fluid on right side. Left ovary much atrophied and hardened. Clear history of epileptiform convulsions monthly.
20	June 11, 1887.	40	M.	3	..	..	Uterine fibromata.	Complete removal of appendages.	No.	Recovery.	Left tube much enlarged; ovary, size of egg; four small fibromata on fundus.

21	June 11, 1887.	26	M.	...	...	Ovaritis, salpingitis, and fibroid.	Complete removal of appendages.	Yes.	Recovery.	Patient more or less unfit for work on account of pain in pelvis for eight years. Uterus seemed to be about three times normal size from fibroid. Appendages bound down by adhesions on both sides.
22	June 20, 1887.	29	M.	0	0	Enlarged sensitive ovaries.	Complete removal of appendages.	No.	Recovered; no trouble.	Elongated fibroid-degenerated ovaries. Severe dysmenorrhea.
23	June 20, 1887.	30	M.	...	...	Salpingitis and ovaritis.	Complete removal of appendages.	No.	Recovered.	Occluded adherent tubes and cystic ovaries.
24	June 25, 1887.	29	S.	...	...	Fibroid of uterus and ovarian neuralgia.	Complete removal of appendages.	No.	Recovered.	Uterus studded with small fibroids. Constant pain for years. Small fibroids on ovaries also.
25	June 30, 1887.	36	M.	2	2	Fibromata.	Complete removal of appendages.	Yes.	Recovered.	Fibroid size of $3\frac{1}{2}$ months; pregnancy. Enormous enlargement of veins of broad ligament. Violent hemorrhages, not controlled by curetting.
26	July 26, 1887.	26	S.	...	...	Ovaritis and salpingitis.	Complete removal of appendages.	No.	Recovery.	Suffered for past twelve years with pains in right iliac region, which have been getting worse and unbearable, with menstruation. Both ovaries and tubes inflamed and bound down, especially on right side.
27	July 30, 1887.	28	M.	1	...	Peritoneal adhesions fixing uterus backward, obstructing rectum, ovaritis.	Laparotomy. Separations of adhesions.	No.	Recovered.	Except for adhesions, appendages apparently normal. Partial intestinal obstruction; constant back-ache.
28	Sept. 14, 1887.	29	M.	1	...	Old peritoneal adhesions fixing uterus backward and obstructing rectum.	Separation of adhesions of appendages and uterus.	Yes.	.....	Appendages apparently about normal, except from adhesions.
29	Sept. 15, 1887.	27	M.	1	...	Ovaries and pyosalpingitis.	Complete removal of appendages.	Yes.	Recovery.	Has had hemorrhage for a year; two months ago had severe pain in left iliac region, and a few days later noticed a lump. Left tube and ovary contained about five ounces of pus. Size of abscess was very different, especially to right. Right appendages also very inflamed, abscess was filled with water, tense, hard.

No. Case.	Date.	Age.	Married or Single.	No. Children.	No. Abortions.	Tappings.	Diagnosis.	Operation.	Distance.	Results.	Remarks.
30	Sept. 18, 1887.	27	M.	2	..	..	Fibromata.	Complete removal of appendages; curetting.	No.	Recovered.	Ovaries twice normal size and fibroid-degenerated, having several small fibroids dependent from them. Fibroma in left cornu of uterus, of size of orange, and several smaller ones in posterior wall.
31	Oct. 1, 1887.	26	S.	..	..	..	Ovarian neuralgia.	Removal of left of appendages.	No.	Recovery.	Ever since puberty has had more or less pain in left iliac region, which has become worse and worse, especially during menstruation. Pain incapacitates her for work. Left ovary much atrophied.
32	Oct. 8, 1887.	34	W.	3	..	..	Uterine fibroids.	Complete removal of appendages.	No.	Recovery.	Painful fibromata with uterine displacement, and hemorrhagia.
33	Oct. 8, 1887.	21	M.	1	..	..	Cystic ovaries.	Complete removal of appendages.	No.	Recovery.	Constant pain. Both ovaries atrophied and cystic.
34	Oct. 12, 1887.	29	M.	2	1	..	Salpingitis and enlarged cystic ovary, right side.	Complete removal of right tube and ovary.	Yes.	Recovery.	Left tube and ovary removed previously. Large tube occluded; cystic ovary size of orange, containing coffee-colored fluid.
35	Oct. 15, 1887.	39	M.	..	..	No.	Uterine fibroid multiple.	Complete removal of appendages.	No.	Died; fifth	Multiple, irregular and painful fibromata seven in number. Autopsy showed no signs of sepsis or peritonitis. Kidneys in state of chronic interstitial nephritis. With six other cases was poisoned by sewer gas after operation.
36	Oct. 23, 1887.	38	M.	3	6	..	Pyosalpingitis both sides.	Complete removal of appendages.	Yes.	Recovery.	Both tubes much enlarged, one containing about two ounces of pus; ovaries much inflamed, and cystic; many adhesions.

REPORT OF TWENTY-FIVE CASES OF ALEXANDER'S OPERATION.

BY J. H. KELLOGG, M.D., BATTLE CREEK, MICH.

1. *Twelve Cases of Retroversion and Prolapse of Ovaries.* — Up to date I have performed Alexander's operation twenty-five times, which may be classified as follows : —

Retroversion, with prolapse of one or both ovaries, fifteen cases.

Retroversion and retroflexion, with prolapse of one or both ovaries, six cases.

Complete procidentia, two cases.

Anteflexion, with retroversion and prolapse of ovaries, one case.

Extreme anteversion, one case.

All of these were very chronic cases. In all but one or two cases the patient had been for many years under treatment of various competent physicians without more than temporary relief, but had on the whole steadily become worse. In fully one-half of the cases there was enlargement of one or both ovaries. In every case the ovaries were tender. In two cases the patient was subject to epileptic attacks. Of the two cases in which the operation did not succeed perfectly, both were cases in which cellulitis and adhesions existed. In one of these the ligaments were very slender, and I was able to draw out but one of them. The uterus was, however, held in perfect position for several months, and was only displaced by repeated violent straining at stool, which the patient allowed, contrary to advice. I did not place a pessary after the operation in this case, as I should now do. The uterus has not, however, returned to its old position. It has simply been tilted back somewhat, so the fundus can be felt with the finger; but it has not been down in the hollow of the sacrum, as formerly. At present the patient is made entirely comfortable by the aid of a small lever pessary, and the uterus will remain well in position several days without the pessary; whereas, before the operation, it would not remain in position without the aid of artificial support for more than fifteen minutes if the patient was on her feet, and pessaries of all sorts gave her so much distress that they could not be worn and had been abandoned for years, so that this case cannot be considered in any proper sense a failure. The patient's condition has certainly been very greatly improved by the operation. The general health is also very much better.

In the other case referred to, in which the operation was not a per-

fect success, the ovaries were very large and closely adherent to the posterior surface of the uterus. When the uterus was restored to position by the sound, the ovaries as well as the fundus were carried up out of reach. This led me to hope that by shortening the ligaments the patient's condition might be improved. The operation was performed August 4. Since the operation the ovaries can be felt nearly as well as before. The uterus is higher in the pelvis, however, and the patient is wonderfully relieved of nearly all of her old symptoms. Menstruation painless, with the exception of slight pain at one period. Patient has gained nearly twenty pounds in flesh. No tenderness or throbbing anywhere about the uterus or ovaries. Patient can be upon her feet all day long exercising actively without discomfort. Wears a small lever pessary.

2. *Three Cases of Retroversion and Retroflexion, with Prolapse of Ovaries.*—Two of the cases were operated upon eight months ago, one four months ago. Two of the patients are perfectly well. In one the operation was only partially successful in permanently restoring the uterus to its normal position. The uterus was very large and the flexion very marked. Patient had had epileptic attacks for several years, which seemed to be connected with the pelvic disease. At the time of the operation I placed a stem pessary to overcome the flexion. The pessary gave a great deal of pain and induced repeated attacks of epilepsy, on which account I was obliged to remove it on the third day. Two months after the operation the uterus was held well forward in the pelvis, but the flexion was but partially overcome. The patient was greatly improved, however, and left for home three months after the operation, gaining flesh rapidly, relieved of back-ache and other local symptoms, and in every way greatly improved. When last heard from, the epileptic attacks had not returned.

3. *Two Cases of Complete Procidentia.*—The first case, Mrs. R., operated upon Oct. 29, 1886. Left the institution and returned home six weeks after the operation, with uterus in perfect position. The cervix was shortened fully one-half inch. Fundus was of normal size. Ovaries as well as uterus were in normal position. Patient would not wear a pessary, and insisted upon going home against advice. I did not consider her yet in a perfect condition of health. At the end of six months, however, she reported herself perfectly well, with uterus in normal position. Had been for several months engaged in business, which required her to be upon her feet all day long. I have since heard that there were symptoms of return of the old difficulty, at which I am not surprised, as the patient was a very reckless person, self-willed, and determined to have her own way at all hazards.

In the second case, operated upon May 9, found the ligaments very slender. The vagina was greatly relaxed, and I desired to perform posterior colporrhaphy in addition to Alexander's operation; but the patient would not consent. The uterus remained well anteverted; but, a few weeks after the operation, in straining at stool, the patient found that the cervix and the bladder had been dragged down by the prolapsed vaginal walls. The uterus is retained well in place, however, by a small ring pessary, and the patient is very comfortable; whereas, before the operation, nothing but an inflated rubber ball would retain the organ in position.

In both of these cases I believe a perfect and permanent result might have been obtained by the adoption of the more thorough-going measures, which I was only deterred from employing by the over-confidence of the patients that they would be well enough without the operation.

4. *Case of Antelexion with Retroversion and Prolapse of Ovaries.*—Operation performed six months ago. Patient enjoying better health than for many years. Almost wholly relieved of the local symptoms which had formerly made her a complete invalid. The ligaments were very slender. Was unable to draw the uterus forward as completely as I desired to. For several weeks subsequent to the operation the uterus seemed to be drawn more and more forward, until the flexion was nearly overcome. The ovaries are well drawn up. The case can be considered a fair success.

5. *Case of Complete Anteversion.*—This was the worst case of anteversion I have ever encountered. The patient was an unmarried woman, aged thirty-three. Complete invalid for eight years. Constant and great distress in lower abdomen when upon the feet, and all the other symptoms usually attending this form of displacement.

Operation, May 31. Shortened ligaments three and one-half inches, thereby lifting the uterus backward and upward fully two inches. Uterus was drawn back to nearly a normal position by traction upon the ligaments. Since the operation patient has been relieved of the distress which she formerly suffered when on her feet; has for three months been engaged in regular household duties; is gaining in flesh, and is really in excellent health, though she still has some irritability of the bladder, the result of the long-continued pressure to which it had been subjected. A thing that has rather surprised me in this case has been the fact that, although when the patient first got upon her feet, after the operation, the uterus was in a half-anteverted position, it has been steadily retreating for the last three months, and is now in so nearly a normal position that no

physician would think of considering it out of place. The patient does not suffer the slightest inconvenience from this source.

Of the five more recent cases, the last of which was operated upon September 19, three were cases of retroversion with retroflexion and prolapse of ovaries. The other two were cases of simple retroversion with ovarian prolapse. All these patients are doing well, and promise to make complete recoveries. The last case operated upon has already been discharged, and has gone home feeling better than for three years, declaring herself, in fact, perfectly well.

I conclude, from my experience with the operation, that it may be appropriately employed in the following classes of cases: —

1. Cases of retroversion and retroflexion of the uterus which have resisted reasonable efforts for their relief by other rational means.
2. Cases of procidentia, especially those in which the cause is attributable to subinvolution of the uterus and vagina, provided always that a perineorrhaphy or colporrhaphy, or both, shall also be performed when necessary, to enable the vagina and perineum to do their duty in retaining the uterus in position, after it has been placed there by shortening of the ligaments.
3. Cases of antelexion combined with retroversion, especially when accompanied by prolapse of the ovaries.
4. Carefully selected cases of anteversion.
5. Cases of ovarian prolapse, in which the ovaries are not held down by adhesions.

I have not performed the operation for the last-named purpose alone, but in twenty-three of the twenty-five cases upon which I have operated the ovaries have been prolapsed and tender, and generally one or both has been somewhat enlarged. In every case, however, the ovaries have been restored to their normal position, and with the exception of two cases they have been retained there. This experience has led me to the determination that I shall employ the operation to restore to its normal position a displaced ovary when a case shall present itself in which relief of this sort is indicated.

Slight adhesions, such as do not prevent the easy replacement of the uterus by the sound, do not necessarily interdict the operation.

So far as I know, the case upon which I operated for relief of anteversion is the only case of this sort which has been reported. Whether or not the operation will be approved for cases of this sort by other surgeons I do not know, but the results certainly seem to justify the procedure. Certainly the operation must be considered to be a demonstration of the erroneous character of the views which have heretofore

been held by gynecologists respecting the relation of the round ligaments to anteversion.

I have also been struck by the fact that in some cases of retroversion of extreme degree and long duration, in which I expected to find the round ligaments greatly attenuated, I have instead found them very much larger than the average, and throughout their entire length. This leads me to believe that various uterine displacements are sometimes due to hypertrophy of these ligaments, by which they are increased in length as well as in thickness. That such a hypertrophy does occur is recognized by Scanzoni and others. It may be the result of subinvolution after childbirth, or from what may be termed a post-menstrual subinvolution from cold contracted at the menstrual period, or other causes, by means of which the menstrual function is so deranged that the uterus and its appendages fail to return to their normal condition. After menstruation, the uterus being heavier from congestion and subsequent overgrowth, and the round ligaments elongated by the same causes, so that they permit the organ to make too great descent in its excursions downward in such muscular acts as coughing, lifting, defecation, etc., it is not marvellous that the top of the womb is finally tilted so far backward as to enter the current of downward action, and, being engaged by the intestines above, it is forced into the hollow of the sacrum.

In watching the results of shortening of the round ligaments I have been led to the conclusion that the amputation of the outer extremities of the ligaments sets up a process of involution not only in the ligaments themselves, but also in the uterus and its other appendages, including the ovaries, just as involution of a subinvolved uterus is often set up by an operation upon the cervix. This result must be in part due to a restoration of the normal circulation by the changed position of the organ, but the process is so rapid that it seems but fair to suppose that the idea advanced has foundation in fact. The rapid decrease in size of the enlarged uterus and ovaries, as the result of this operation, has really astonished me. In a number of cases the uterus became in a few weeks after the operation actually less than average size. This peculiarity was independently noticed and remarked upon by an excellent gynecologist who examined six of my cases within a few weeks after the operation.

My practice has been to draw the uterus close up to the anterior abdominal wall, or at least to make the ligaments taut. I at first apprehended some trouble from pressure upon the bladder, but this has not occurred in a single instance. The reason for this I understood after relieving a case of anteversion by the same operation.

In order to determine the strength of the ligaments I tested the outer

three inches of a medium-sized ligament by tying a tin pail to one end, and pouring water into the pail until it broke. When the weight reached 8 lbs. 10 oz. the ligament stretched about one-fourth of an inch, and was then cut off by the ligature by which the pail was attached. This clearly shows that the round ligaments are strong enough to perform the work demanded of them, which is merely to hold the uterus forward out of the current of downward action until the other natural supports of the organ can recover their normal tone, and thus ensure a permanent result.

As regards the advantages of this operation over the use of pessaries, it seems to me there is everything to be said. Of 643 cases of uterine displacement treated by Dr. Mundé and other gynecologists of good standing, only eight were reported as cured by pessaries. I have the records of over two thousand cases treated within the last twelve years by myself and my assistants, in which I have endeavored to employ all the efficient agents known to the profession, but failed to effect a radical cure in more than four or five per cent. of the cases. The pessary will always have its legitimate use; but I believe that an appreciation by the profession of the benefits to be derived from Alexander's operation will greatly limit the use of the pessary, and will relieve a vast number of suffering women from an onerous burden.

The recognition of the fact that the round ligaments are largely muscular in their structure, and not mere fibrous bands, must greatly weaken the faith of the profession in the methods of treating uterine displacements heretofore in vogue.

For the benefit of those who are not familiar with the operation, and especially as my method of operating differs from that of others somewhat, I will take the liberty to quote the following description of my mode of operating from a paper read by me before the Michigan State Medical Society, at its meeting in June of the present year:—

“The operation is certainly one requiring some dexterity and much patience. The patient should be prepared for the operation the same as for a laparotomy, or an operation for irreducible hernia. The patient should have a thorough soap-and-water bath or shampoo, or, if possible, a Turkish bath, the day before the operation. Before beginning the operation, thoroughly shave the mons veneris and the lower half of the abdominal surface, and scrub thoroughly with soap and water and a nail-brush; then sponge with corrosive sublimate solution, one part to four thousand. This solution is used for irrigating the wound during the whole operation.

“In beginning the operation, first find the spine of the pubes, and locate Poupart's ligament. Make an incision through the skin and super-

ficial layer of fat, beginning at the spine of the pubes, and extending the cut parallel with, and just above Poupart's ligament, for one or two inches. Even less than one inch is sufficient in very thin subjects. An incision more than one or one and one-half inches in length is seldom required. As one acquires skill in operating, the incision may be made shorter. Next cut through the fascia, and separate the areolar or adipose tissue beneath with the handle of the scalpel, exposing the tendon of the external oblique muscle. Now place the end of the finger in the wound, first pressing it upon the spine of the pubes, then allowing it to slide upward and outward. A few lines distant from the spine of the pubes the external abdominal ring will usually be felt. Sometimes, however, the ring is so small as to be almost imperceptible. I found it, in one case, scarcely an eighth of an inch in diameter. In other cases I have found it large enough to receive readily the end of the index finger. Next, press the tissues outward so as to expose the ring. Sometimes a little mass of fat will be seen at once protruding from the ring. In other cases the transverse fibres connecting the columns of the ring are found so abundant as to confine everything within the canal, except the spreading fibres of the cord and the glistening branches of the genito-crural nerve. Carefully divide the transverse fibres or intercolumnar fascia. A grayish mass, which includes the round ligament, rises between the columns of the ring. This should be seized with a pair of blunt forceps, and raised sufficiently to allow an aneurism needle or blunt tenaculum to be passed beneath the entire mass. Now, raising the mass gently, examine it carefully to discover the ligament, if possible. This cannot always be done, but by carefully dividing first the nerve and then the structures which are attached to the borders of the ring, stretching the tissues taut, and dividing by very slight cuts the tissues which are the most tense, the mass may be gradually drawn out from the ring. By patient and careful work the ligament may be drawn out sufficiently to bring into view the portion which presents the characteristic appearance previously mentioned, by which it may be readily distinguished from the fascia surrounding it.

“ The ligament may now be completely separated from the other tissues, and unless there is an unusual development of the peritoneal pouch forming the canal of Nuck, it can be readily drawn out its full length. This should not be done, however, at this stage of the proceedings. Trusting the ligament, which has now been isolated, to the hands of an assistant, or, better, catching its outer extremity in the grasp of a pair of catch forceps, cover the wound first with a sponge and then a napkin saturated with the corrosive sublimate solution; then proceed to isolate the ligament of the other side in the same manner. When this has been

accomplished, secure the ligament with catch forceps placed near the external end, and cover the wound as before.

“The uterus should now be placed in complete anteversion. This can sometimes be done by the finger alone, if the case is one of procidentia or retroversion; but it is usually better to employ a sound with a bulbous extremity made large as possible, so that the endometrium may not be injured.

“Having placed the uterus in anteversion, the sound may be trusted to a careful assistant, who will keep it in precisely the position fixed. The use of the sound is imperative in cases of retroflexion, as it is apparent that traction on the ligaments, without first straightening the uterus, would only increase the flexion, although it might lift the whole uterus forward. In cases of this sort it is necessary to introduce an intra-uterine stem after the operation, to be worn for a few weeks.

“After thoroughly cleansing the hands proceed to withdraw the ligaments sufficiently far to enable them to control the uterus. The operator can usually determine this readily by the tension upon one ligament when the other is pulled upon; but, for a more satisfactory demonstration of the exact effect produced by drawing upon the ligaments, a finger should be placed upon the cervix while the ligaments are alternately pulled and relaxed.

“All that now remains to be done is to secure the ligaments in position, and close up the wound. If the external ring has been enlarged, the pillars of the ring must be approximated by one or two ligatures of carbolized catgut. The proper degree of tension for each ligament having been determined upon, an assistant should hold both at the proper point, and the operator should pass a double-threaded needle carrying a silver wire through the skin, the pillars of the ring, and the deepest part of the ligament which can be reached. The needle should also be passed through the peritoneal coverings of the ligament if these have been dragged forward with it. The needle should enter and emerge at about one-half an inch distance from the edge of the wound. Two sutures of this sort are usually sufficient. The balance of the wound should be closed with skin sutures of either silk or catgut, some of which may pass through the ligament.

“I have found a decided advantage in the use of a broad plate of sheet lead or of vulcanized rubber, which is placed upon the mons veneris, between the lower angles of the wound, over which the ligaments are secured by means of silver wires attached to each ligament close to the wound, the free ends of the wires being twisted together. By this means the tension is removed from the wound. Since employing this device I

have secured union by first intention in nearly every case. I believe that this method of securing the ligaments possesses an improvement which, in addition to securing more prompt and certain union, prevents the possibility of the escape of the ligaments into the abdominal cavity in case of the failure of the wound to heal by first intention, or in case of suppuration after the sutures have been removed. The portion of the ligaments exposed externally becomes dry and hard, and usually remain intact for a full week, giving ample time for the portion of the ligaments included in the wound to become firmly fixed in their new position. It is certainly very important to employ all possible safeguards against the accident referred to, as a woman with detached round ligaments would be in a worse condition than before the operation.

"In dressing the wound I first sprinkle over and about the incision iodoform, or a mixture of one part of iodoform with two or three of sub-nitrate of bismuth. Over this I place a piece of sterilized sheet lint, and cover all with a mass of sterilized absorbent cotton, made a little thicker over the wound, and a thick pad of sterilized cheese-cloth, covered with oil muslin over all. A thorough hot vaginal douch is administered, the uterus propped up with antiseptic cotton pledgets, or a proper pessary, and the patient put to bed."

NOTES OF PAPER ON ALEXANDER'S OPERATION,

BY PROF. A. DOLÉRIS, OF PARIS.

Read before the American Gynecological Society, September, 1887.

THE speaker treats cases of retroversion of the uterus by shortening the round ligaments, in case all other treatment has failed. Where there is retroflexion he first overcomes the flexion by forcible dilatations, and then shortens the ligaments. In cases of prolapse he restores the uterus to a normal position, amputating the cervix if hypertrophied, and performing anterior and posterior colporrhaphy.

If the uterus is, moreover, badly retroverted, he shortens the round ligaments in order that the pressure of the intestines may not come on the anterior surface, and thus lead to a return of the prolapse.

If the uterus is not retroverted, but anteverted, in cases of prolapse, it is unnecessary to shorten the round ligaments, as the pressure of the abdominal contents does not come upon the anterior surface of the uterus as in cases of retroversion. The object of shortening the round ligaments is not to suspend, but to antevert, the uterus. Dr. Dolérís performs anterior and posterior colporrhaphy and shortens the round ligaments at one time of operating; the whole procedure requires in his hands about an hour and a half, or less. He has performed the operation some eighteen times with very satisfactory results. It is not performed very frequently in France, but it is used in special cases by a number of operators.

THE RESULTS OF THE EXPERIENCES GAINED IN SIX
AND A HALF YEARS OF THE OPERATION OF
SHORTENING THE ROUND LIGAMENTS FOR UTERINE
DISPLACEMENTS.

Abstract of the Paper of WILLIAM ALEXANDER, M.D., F.R.C.S.

Read at the Gynecological Section of the Ninth International Medical Congress.

THE author traces the development of the operation since December 14, 1881, when he performed his first case; since then he has operated 84 times. The full table of the above, with complete description of the operation, will be found in the Transactions of the Congress. He has always considered it easy, simple, and safe, and no more expects a death from it than from the amputation of a finger. During six and a half years the author has had sufficient experience in learning to improve the methods of shortening the round ligaments, has observed the success, real advantages, and dangers of the operation. He considers additional surgical treatment very important. He gives in full his present method of performing the operation, supplementing, and in accordance with, previous publications. "Of 84 cases 1 died of pyæmia and peritonitis, while 4 others were done too recently to be included in the statistics of those happily convalescing. Thirty-five were private cases, and in those there were no symptoms causing trouble, excepting in one case; this patient, 5 days after the operation, became restless, undid the bandages, opened up the wound, and became pyæmic; her life was, however, saved.

"Thirty-one private cases were for retroflexion and its attending trouble, the prolapse, which frequently accompanies the backward displacement, being only secondary. Of these 31, 20 are anatomical and therapeutic successes; 5 are anatomical successes, and the patients are much relieved; 2 are anatomical successes, and therapeutic failures; and 4 failed in both respects. Of the 4, the recoil of the uterus drew the ligaments back before union took place in 1 case. In 1 my attempt to do without the drainage-tube ended in non-union. In 1 suppuration produced non-union; and in 4 the same closed properly again. I believe these anatomical failures can be completely avoided. Of the hospital cases, 27 were for retroflexion, and 9 for prolapse. Prolapse is a much more serious trouble in hospital cases, where patients have to work hard for their living, than among the wealthy class, where rest and attention are to be had. All but one have been successful, as far as the author was able to ascertain; that one was malformed, and, even when the fundus of the uteri was the second time pulled up to the abdominal wall, the cervix was

protruding. An external operation gave her relief and comfort. In 12 cases I fortified the perineum; and 2 others required to wear a light ring pessary, that before the operation was useless, and have continued well without any suppuration, and without perineal operation.

“It is, in my opinion, the proper operation, even in extreme cases of prolapse, and the only mode of treatment for this disease worth considering at the present time; the perineal operation that I perform does not differ materially from many descriptions of others.”

[For description of the perineal operation see Transactions.]

“Of 27 retroflexions 23 were anatomical and therapeutic successes; 3 anatomical and partial therapeutic successes; 1 anatomical success and therapeutic failure cured by removal of cystic ovaries.

“Many of my hospital patients disappeared soon after the operation, and may not now be so well as when last seen, but I think that most of them would have returned again if anything had gone wrong.

“*Anatomical cures of retroflexion, by shortening the round ligaments*, are the most certain results of the operation, 54 cases out of 58 being successful, as far as I know. It has been performed for epilepsy, hysteria, menstrual trouble, etc.; troubles that years of treatment did not alleviate, or even mitigate. In a great many of such it is rendered necessary to remove the appendages; several cases of inflamed appendages have recovered rapidly after the replacing of the uterus in normal position. In 3 cases the appendages have been removed afterwards; 1 of these died; 1 was relieved from pain; and 1 has only been done recently, but has recovered from the operation.

“*Pregnancy*.—Two of my cases of retroflexion are pregnant at the present time and have not suffered as yet; one is at the third month, and the other at the eighth month; one has been pregnant twice with no inconvenience, and without any return of the retroflexion for which the operation was performed. As far as I know, I can, without hesitation, say the operation is no obstacle to pregnancy or parturition.

“*Hernia*.—There is now no doubt that danger of hernia is actually produced by the operation. The danger is not, however, very great, as it has only occurred a few times in my practice, where the operation has been performed in divers ways, and where occurrence of hernia as an after consequence was not for a length of time especially guarded against. Since I became aware of the danger of hernia I have more effectually guarded against it by the closure of the external rings by union of parted sutures; non-union of these is a danger to the occurrence of hernia, therefore it should always be remembered that such danger has always to be regarded; intervals of rest after the operation and the wearing of an abdominal belt is a further method in combating the danger to hernia.

“*Adhesion, Prolapse, Painful Ovaries, Appendages, etc.* — These conditions may render the anatomical success of the operation uncertain, but not so frequently as I once supposed. Many of my private cases had adhesion, and some of them of very long standing, and with these I have been remarkably successful. Many prolapses and painful ovaries are now well, or have ceased to be painful, — ceased, or nothing like so distressing as they formerly were. In these cases the ligaments must be well pulled out, and the uterus well supported by a Hodge and stem pessary.

“Constipation, the prominent symptom of all these cases before operation, has been much relieved by the operation, the uterus and adhesions being raised from the rectum.

“*Cases in which the operation should be performed for Retroflexion.* — In paupers who are in institutions supported by the State, where time is not of much moment, and where radical cure is best for all parties, I operate, as a matter of course, if the patient leaves the choice of treatment in my hands; the results have justified the course of procedure, inasmuch as all the pauper cases of retroflexion have been, as far as I know, ones of permanent relief, and have not troubled us again.

“In the wealthy and leisure classes of women, where pessaries only give temporary or partial relief, and where intervals of rest are required to obviate the results of the use of these instruments; where constant attention of the medical man is irksome or intolerable, and the patient is a chronic invalid: where pessaries fail entirely, or where neurotic symptoms are present and the patient's health is failing, — I would at once recommend the operation if the examination leads me to think the operation would be anatomically successful. In the middle classes, where women have family duties to perform, the suffering is perhaps greater than in either of the other two classes, and the difficulty of obtaining a month from household cares is a serious obstacle to performing the operation. These cases are more for a women's special hospital. I believe if these operations were done earlier in such cases, recourse to the removal of the appendages would be less frequent.

“*Prolapse.* — Amongst the upper classes this operation is not really required with the same absolute necessity as amongst the lower and working classes. Light pessaries often enable them to perform their duties with comfort. And during the child-bearing period the double operation should with them always be delayed. When the child-bearing period has ceased, pessaries are irksome and require frequent attention; then I would recommend the double operation. The comfort given by it is undoubted. The look of satisfaction of some of my patients' faces, when the effects of the operation are referred to, is pleasant to witness.

Amongst the lower and working classes the operation is, indeed, a great boon. It is applicable to the worst cases, provided the patient is able to bear the effects of the operation; and if she is in fairly good health, both operations can be performed at the same time. In child-bearing women the perineal operation should always be avoided, if possible. But in some the troubles are so great, and the pessaries so ineffectual, that I have performed the operation in spite of the possible chances of pregnancy. It does not follow that the effects of the perineal operation would be destroyed by pregnancy, and, if rupture occurs during parturition, were it well stitched up, *recurrence might be prevented by the medical attendant*. I am much more sure in doing my prolapse operation than in operating for retroflexion. In the former cases I am certain of the therapeutic success as well as the anatomical success, although it is not a displacement which troubles the patient, but something else depending upon, or supposed to be depending upon, the displacement, but which often does not depend upon it, or can exist independently of the displacement for a time. In prolapse the relief is decided and demonstrated. In retroflexion the relief is sometimes as decided, whereas, sometimes, a partial cure occurs which is not so satisfactory to the patient or her friends. Slow changes have to take place in the uterus and its appendages, — changes that are, I believe, always beneficial and never injurious; changes that tend toward health and never toward disease. Through these changes complete recovery gradually takes place."

WE greatly regret that we have to announce the death of Dr. EDWARD PRITZL, the accomplished chief assistant of Prof. C. Braun's Clinic in Vienna. Many of our younger readers are under obligations to him for his graphic demonstrations, practical instruction, and never-failing courtesy.

In full health and strength, he was cut off in the flower of his manhood, and died in the discharge of his duty.

He acquired septic infection from a patient with puerperal fever, and erysipelas of the face ensued, which extended to the lungs and terminated his life after a short and painful illness. His industry and talent promised a brilliant future, and his loss will be widely felt.

His death, like that of Schroeder and of Semmelweiss himself, only furnishes another example of the risks which physicians run in the discharge of their duty, and of the terrible virulence of the septic poison which is lying in wait for them, as well as for their patients.

ABSTRACT OF A PAPER ON THE REMOTE RESULTS OF
THE OPERATION OF SHORTENING THE ROUND LIG-
AMENTS FOR DISPLACEMENTS OF THE UTERUS.

BY WILLIAM L. REID, M.D., GLASGOW, SCOTLAND.

Read before the Section for Gynæcology of the Ninth International Medical Congress.

I PRESUME that every one in this room understands that the operation of shortening the round ligaments consists in dissecting down upon the external abdominal ring; catching up the terminal fibres of the round ligament as they appear there; pulling out as much of them as suffices to restore a displaced uterus to something like its normal position, and stitching the shortened ligaments to the pillars of the external ring. I also presume it is well known that, although Drs. Alexander and Adams published the details of the operation early in April, 1882, and that it has been practised since that time in various countries, yet that great difference of opinion exists as to whether or not real benefit has been derived by those who have been subjected to its influence.

I early took an interest in this operation, and have performed it thirteen times, reserving it for those cases in which the symptoms were urgent, and had resisted other and more ordinary forms of treatment. A few of these cases are now some years old, and I propose to give you the facts of their past history and present condition in order that you may judge of the results for yourselves. Here, I ought to premise that the words "remote results," in the title of this paper, are held to mean results observed, at least, a year after operation. With a view of bringing out the experience of other gynæcologists, I wrote to various medical friends who were likely to be able to give more or less authoritative opinions on the subject. A number of them could express no opinion from lack of experience; others sent me particulars of cases which I should have liked to quote here, but, unfortunately, the time at my disposal will not allow me to do so. I shall therefore simply cite some of their opinions.

Dr. J. Matthews Duncan, London, says: "I do not regard retroversion or retroflexion as a disease in itself; therefore I would expect little from shortening the round ligaments. I feel sure (as is corroborated by cases) that such shortening will not retain in new position, if there is any considerable tendency to retroversion or retroflexion. I lately saw a case which had been operated on by high authority in such operations, if not the highest. More than a year had elapsed since the operation. The patient declared herself worse than before the operation. The uterus was

in a state of what a displacement theorist would call aggravated anteversion. But one case can decide nothing."

Dr. Halliday Croom, Edinburgh, says: "I think well of the operation of shortening the round ligaments. In two cases I have only been able to find one round ligament, and in two, both. In all the cases there was marked improvement."

Dr. Skene Keith, Edinburgh, says: "My single case, one of retroversion, kept well for nearly three months, and the uterus became displaced as badly as before. I have been on the outlook for another case, but have not had one."

Dr. William Alexander, Liverpool, who first performed the operation on the living subject, sends a paper detailing his experience to this Congress.

Dr. Clement Godson, London, says: "A patient came to me, a long time back, with retroversion and prolapse, for whom I inserted a Hodge. I never saw her again for a couple of years, I think, when she turned up, saying she was staying in Liverpool, and was persuaded to see Dr. Alexander, who took out the pessary and operated on her, without any benefit to her. Her discomfort was the same; iliac pain and bearing down. I examined her, and found not the slightest trace of prolapse or retroversion."

Prof. W. S. Playfair, London, says: "I have only seen two cases; one I did myself, with no beneficial results that I could see; the other case had been operated on in Australia. The patient assured me that the operation had had no beneficial results that she could estimate. The case, however, appeared to me to be one in which oöphorectomy was indicated, and I should not myself have considered the shortening of the round ligaments as likely to be of any service."

Dr. John E. Burton, Liverpool, says: "Although I have not been able to keep track of the cases on which I have performed Alexander's operation, I have seen a sufficient number that have now been operated on for, at least, three years, to form tolerably definite views as to the value of the operation. I am quite satisfied that by its means a non-adherent uterus, prolapsed or displaced backward, can be drawn upwards, inclined forward, and maintained in that position permanently. . . . At least three of my cases have borne living children since the operation; two of them had never either been pregnant or borne a living child, and in two cases the operation seemed to cure sterility of some years' standing. I am sure a number of my patients are now walking about without pessaries, who, without the operation, would have been doomed to wear them. . . . I look upon the operation as a useful one. It will do certain things. Whether these certain things are necessary or expedient every surgeon will decide for himself."

Dr. James A. Adams, Glasgow, who shares with Dr. Alexander the credit of suggesting the operation, says: "The majority of cases on which I have operated have been those in which prolapse existed, but I have had one or two in which there was retroflexion. In the most of these cases marked improvement resulted, and in several this improvement has continued some years. . . . On the whole, I think well of the operation in cases of retroflexion and prolapse. I should, however, operate in retroflexion only if the condition occasioned distress, or if it were a probable cause of sterility.

"The operation is one that all and sundry cannot perform, and it is amusing to hear otherwise well-qualified obstetric and general surgeons condemning the operation because they consider the round ligaments to be mythical structures, or because they have pulled out *something* and passed a few sutures through it. There is more risk of failure in pulling out too little than too much."

Prof. Wallace, of Liverpool, says: "I look upon the operation as wrong in principle, and likely to be a failure; which practically it is in the cases which I have observed. I have asked Dr. Alexander to permit me to overhaul a dozen or so of his earlier cases, but the opportunity has not yet arisen, and, I fear, never will. In one class of cases only can it be imagined as of possible help, namely, in women past the child-bearing period, in whom all other treatment has failed. Theoretically and scientifically in all other cases it has not a leg to stand on, and is a failure in every case but one I have seen, and that, and most of all of the others, could have been cured by other measures. The end is worse than the beginning."

[Here follow reports of eight cases which will be found in full in the Transactions of the Congress.]

This record, gentlemen, is not that of cases selected in any way to support or undermine any particular theory or conclusion, but is an unvarnished statement of fact in regard to every case on which I have operated and which is more than a year old. I could have wished the results more brilliant; but such as they are they may be tabulated as follows:—

Nos. 6 and 7, meanwhile, completely cured. No. 1 almost cured. Nos. 3, 5, and 8, considerably improved. No. 2 in about the same state as before the operation. No. 4 worse than before operation, inasmuch as now a left inguinal hernia exists.

Viewed in the light of a mechanical operation for mechanical purpose, *i.e.*, the restoration of the uterus to nearly its normal position, the results may be thus stated:—

Nos. 1, 2, 3, 5, 6, and 7, cured. No. 8 very greatly improved. No. 4 as bad as before the operation.

With a careful operator and a cautious patient, there ought, I think, to be no after bad results ; but it will be observed that, aside from failure to sustain the uterus, I have had one lamentable accident, that of hernia, in the fourth case described. This leads me to make some remarks on what may be termed the accidents of the operation, and give such hints for their avoidance as are suggested by my personal experience.



Case 7. — Cured by Alexander's operation.

1. *Hernia.* — To be avoided by dissecting down, not on the external ring, but on the tendon of the external oblique muscle, a little way above the ring, so that the terminal fibres of the cord may not be destroyed, and no necessity exists for opening up the inguinal canal to reach the cord. Severe exertion should be avoided for at least six months after the operation. I believe it wise to pass one or two deep sutures across the inguinal canal, in order to occlude the pouch of the peritoneum which is dragged down into it. This prevents a knuckle of bowel from being forced down and a tendency towards hernia.

2. *Relapse into former condition of displacement.* — This is to be avoided by thorough fixation of the ligament to the pillars of the external ring, special care being taken to include at least three-quarters of the thickness of the cord in each ligature. It should be mentioned that Dr. Inlach, who has had large experience, advises but one fine silk suture for this purpose. The patient should be kept at least a month in bed, and wear a well-fitting pessary for six months after the operation, or longer if her occupation is laborious. It is very noteworthy that a pessary which

would not remain many hours in position before the operation, does so quite well after it. If at all possible, the patient should be spared much exertion for three or four months.

3. *Peritonitis and Cellulitis.* — There have been several deaths after the operation reported as due to these affections. They are to be avoided by keeping the wounds aseptic, well drained, and by not stripping the peritoneum from the cord, but including it carefully in the sutures. In this way the general cavity of the peritoneum will not be opened, and the pouch which is formed by dragging down the ligament will be safely closed by adhesive inflammation.

4. *Failure in getting the ligaments to run out.* — This is to be avoided, in the majority of cases, by careful pelvic bi-manual examination, to ascertain whether or not cellulitis has existed to any marked extent, especially in the anterior part of the cavity. I believe, however, that cases exist, although I have never met with one, where the non-running power of the ligaments cannot be known until they come to be pulled upon during the operation.

At the annual meeting of the British Medical Association at Belfast, in 1884, I read an account of my first three cases, and in regard to the results, then said: "It seems to me that we cannot promise much in the way of certain and immediate relief from this operation. It remedies the position, but not the condition, of the uterus." I still adhere to that opinion; but the lapse of time, and further observation of these cases, warrant me, as I think, in saying that correcting the position of a badly displaced uterus is the first, and a very important, step in the permanent and thorough cure of the otherwise diseased conditions of that organ and its appendages. Some men state that they never meet with retroverted and prolapsed uteri which cannot be comfortably sustained by pessaries or bandages. Such has not been my experience, and, so far as my knowledge goes, restoration of the perineum, in bad cases of retroversion and prolapse, has been less successful than shortening the round ligaments. Especially is this the case in young, child-bearing women.

The conclusion to which I have now come is this: Where the perineum is destroyed, and the uterus severely retroverted or prolapsed, so that it cannot be sustained by any safe pessary, I should consider the propriety of shortening the round ligaments as preliminary to other treatment. If the patient were a fairly healthy woman, and free from any past or present pelvic inflammation, and if she were willing and able to take moderate care of herself for six months afterwards, I should feel myself warranted in recommending and performing this — as I believe it to be in these circumstances — safe operation.

EDITORIAL. — ALEXANDER'S OPERATION.

THERE is no doubt that, by shortening the round ligaments, many chronic and almost hopeless cases can be permanently cured or greatly relieved, especially cases of retroversion, and prolapse of heavy and painful ovaries, where there are no adhesions or very slight ones. It is equally certain that in other cases, apparently similar, the operation fails to give relief, probably on account of organic disease of the ovaries, or of a demoralized condition of the nervous system with a habit of invalidism and a reliance on narcotics.

The procedure is not particularly difficult in the hands of competent surgeons, and with reasonable care and precautions it cannot be considered dangerous. The main questions to be decided are, the limitations of the operation, the indications for its employment, and the proportion of women who have an absence or irregular attachment of the round ligaments.

We have endeavored in this number of the *ANNALS* to lay before our readers the views of those most competent to decide these questions; among these we find differences of opinion in regard to the value of shortening the round ligaments in the treatment of prolapsus uteri.

Dr. Reid is the only surgeon quoted who trusts to this procedure alone, even in bad cases of prolapse, with "a uterus $5\frac{1}{2}$ inches deep, very heavy, cervix badly turned up, the vaginal orifice quite gone." We feel assured that most surgeons will agree with the judicial views of Dr. Alexander himself, who is accustomed, especially in the cases of laboring women, to supplement the shortening of the round ligaments with operations for repair of the cervix and perineum.

Dr. Doleris, who has a large experience of the operation, appears to consider it simply as a supplement to the repair of the cervix and perineum, and to colporrhaphy; that is, when in addition to prolapse there is a severe retroversion of the uterus, he shortens the round ligaments after the other procedures, and at the same time of operating; probably few will dispute the usefulness of Alexander's operation employed in this limited and subsidiary manner. The method of securing the ends of the round ligaments recommended by Dr. Kellogg has not been found necessary by Alexander or other operators. Experience must decide whether this modification is an improvement.

Considering everything, then, we feel sure that Alexander's operation is a distinct addition to our surgical resources, a means of permanently benefiting cases otherwise troublesome or incurable, a valuable addition to the procedures devised for curing cases of prolapse of the uterus, and for preventing recurrence of the same after operation.

CONTRIBUTIONS TO THE MORBID ANATOMY OF CHRONIC INFLAMMATION OF THE MUCOUS MEMBRANE OF THE UTERUS (*ENDOMETRITIS CORPORIS CHRONICA*).

BY LEOPOLD MEYER, M.D. (COPENHAGEN, DENMARK.)

I. THE INTERGLANDULAR TISSUE— (*Continued*).

THOSE cells whose nuclei are small, roundish, and deeply stained may be seen in Fig. 1. Whilst red blood-corpuscles in the different preparations have a diameter of from $3.7-5.9 \mu$, mostly 4.4μ , most of these nuclei measure $5.5:4.4 \mu$ (from $2.9-5.9 \mu$), while the cell itself measures $10.0:8.8 \mu$ (from $6-11.8 \mu$). The nucleus itself is thus about the same size as those we found in the normal mucous membrane, or a little larger, whilst I, in this case, was unable to measure the cell itself. As aforesaid, these cells are always found in great numbers in the interglandular tissue; but still their number varies highly. In some cases they make up quite half of the interglandular tissue; but, as before stated, we may also meet cases in which they form almost the whole of it, whilst there are but extremely few of the large, light nuclei. Among the twenty cases which I have investigated very thoroughly, I found this to be the case three times, viz., in the following patients:—

I. Forty-four years old; seven births, the last eleven years ago, and four miscarriages, the last one nine years ago: considerable secretion: no menorrhagia. The mucous membrane resembled greatly a normal one.

II. Twenty-seven years old; four births, the last one three months since; severe hæmorrhage. The mucous membrane was distinguished by an enormous wealth of glands: in many spots the glands were two-thirds of the whole tissue, and the interglandular septa were only $20-30 \mu$ broad. Besides, solid epithelial cones projected from the glands out into the surrounding tissue. The mucous membrane, very much thickened, over 3.5 millimeters thick. Numerous vessels, chiefly arteries, with very thick walls. The interglandular tissue was composed of closely-packed nuclei, without distinct limits of the cells. Most of these nuclei were round or polygonal, slightly larger than a red blood-corpuscle; some of them were spindle-shaped. This was chiefly the case around the glands. But very few large ($5.0:8.8 \mu$) oval, slightly-stained nuclei.

III. Twenty-seven years of age : three births, with intervals of only one year, last one two years ago. Three months ago she miscarried in the second month of her fourth pregnancy, and since then almost continual hæmorrhage. The pieces of the mucous membrane that were scraped out were more than two millimeters thick, with many vessels ; but besides, there is an enormous quantity of very much twisted glands. The interglandular tissue is composed of roundish cells ($5.9-8.8 \mu$: $5.9-10.3 \mu$) with deeply-stained nucleus half the size of the cell (4.4 : 5.9μ), among which are a few rather larger cells (9μ : 10.3μ , the nucleus 6.0μ : 6.0μ), but likewise with dark, not granular, nuclei.

We find in the interglandular tissue, formed of the two oft-named kinds of cells, some cells and nuclei which it is difficult to classify under either sort ; are we to reckon them to one or the other ? Thus they can resemble the small nuclei in size and form, but are granular and but slightly stained. And if we examine them more closely we are often able to discover gradations from one species to the other. But these cells, which we neither dare bring under the one kind nor the other, form often the chief mass of the interglandular tissue. This is the case in both of the following patients : —

IV. Twenty-nine years old, single, one birth six years ago. Severe metrorrhagia during the last months, especially during the last six weeks. The mucous membrane, in part, in adenomatous degeneration. In other parts of it many vessels, chiefly small arteries. The interglandular tissue is composed of closely-packed nuclei (protoplasm not distinctly visible) ; they were spindle-shaped, $7.3-14.7 \mu$ long (mostly 8.8), $1.5-2.9 \mu$ broad (mostly 2.2). They were but slightly stained, were somewhat granular. However, there were also smaller nuclei, both round and spindle-shaped, which were deeply stained, but there was a decisive majority of the former ones.

V. Forty-six years of age ; nine births and four miscarriages ; her last child was born nine months ago, and since frequent hæmorrhages. The glands somewhat more numerous, expanded, and twisted than in normal state. Enormous quantity of vessels, chiefly arteries of middle size. The borders of the cells indistinct. There were dark small nuclei (4.4μ : 3.7μ) and larger oval, slightly-stained nuclei (7.3μ : 6.0μ) ; but most of the nuclei are between these two with respect to their size, form, and appearance.

I have mentioned that we often find spindle-shaped cells, — cells resembling those of connective tissue, and that they are chiefly found surrounding the glands. They can, however, also appear elsewhere in the tissue. We sometimes even find them in broad bands, although I never saw this so

exquisitely developed as it seems to have been in the cases which Schröder¹ describes by the name of Endometritis dysmenorrhœica. We find in some patients gradual transitions from the common cells with the round nuclei to the spindle-shaped cells; in others, transitions from the small spindle-shaped cells with dark nuclei to large spindle-shaped cells with granular protoplasm and oval, slightly granular, light nucleus. Such gradatory cells may be seen in Fig. 2. We often find in the interglandular tissue cells whose nuclei are dividing or have already divided. I am unable to decide whether these cells are immigrated lymphoid cells (pus cells), or whether they are the cells originally present in the mucous membrane. But we often see the tissue infiltrated with quantities of small, round, very deeply-stained nuclei whose diameter is 3-4 μ . Without any doubt these are immigrated lymphoid cells, and in one case I saw them gather in small, round heaps immediately under the epithelium, *i.e.*, forming small abscesses, about 0.2 mm. in diameter.

If we now turn our attention to *those cells which have a large, oval, granular nucleus*, which are but slightly stained by those staining media we generally use, we have already seen that they may be more or less completely wanting. But in the great majority of cases of chronic endometritis we find them there, and they are, as a rule, quite as numerous as the first-named sort of cells. As these cells can highly resemble the so-called decidua cells, not only by those peculiarities which we already have noticed, but also — as we soon shall see — by the form and size of nuclei and cells, it might really seem proper to suppose that this was their real origin, that they originated in a pregnancy; and this supposition is by so much the more probable, as we, for instance, from Küstner's² researches, are well aware of the fact that decidua can be retained in the uterus after parturition or miscarriage; it can be altered in its structure, and prevent the regeneration of the normal mucous membrane. In some patients, where the malady, *i.e.*, the hæmorrhage, was developed in direct connection with a birth or a miscarriage, we may also find parts of the curetted tissue that are almost solely composed of genuine decidua cells, as may be seen, for instance, in Fig. 3. The case in point is a peculiar one.

VI. The woman was 27 years of age; had given birth twice in due time, last time two and one half years ago; then she had miscarried twice in the sixth week of pregnancy; she is unable to say when it happened, but it was, at all events, long ago. Her menses were normal until a fortnight ago, when a severe hæmorrhage set in at the time she expected the catamenials. A polypus, as large as the last phalanx of a finger, was found in the uterine

¹ L. cit.

² Beiträge zur Lehre von der Endometritis. Jena, 1883.

cavity, and, besides, the mucous membrane was velvety and thickened. The polypus proved a genuine placenta-polypus, formed by villi chorii and decidual tissue, besides coagulated blood. Several parts of the mucous membrane were chiefly composed of cells like those in the drawing; the tissue was infiltrated with blood, and there were many pus cells; in several places villi chorii were also found. But other parts resembled a mucous membrane in a common Chronic Endometritis, with the two kinds of nuclei among each other. The diameter of the cells in the drawing was $17.6-23.5 \mu$: $8.8-17.6 \mu$; the size of the nuclei, 11.8μ : $8.8-11.8 \mu$. Genuine decidua-cells appeared in the following case in a rare way:—

VII. The patient, 32 years old, had given birth to five children, last time three years ago, and had since then suffered from hæmorrhage. Two months ago a miscarriage in the third month. The parts scraped out showed a very varied structure. Part of the tissue was evidently in adenomatous degeneration, and here the interglandular tissue consisted of the first-named small cells, with dark, round, or spindle-shaped nuclei. In other parts the glands were, to be sure, numerous and greatly distended, but no adenoma-formation; numerous vessels; the interglandular tissue was composed of small cells with roundish, dark nuclei, and, besides, of larger spindle-shaped cells with light granular nuclei (the nuclei measured $8.5-14.5 \mu$: $8.5-4.5 \mu$; most of them, 9μ : 6.5μ); the latter cells were, however, not to be found in the deeper layers. In this tissue was seen at one single spot what I have endeavored to reproduce in Fig. 4. Close to the surface, and probably reaching it, lies a piece of tissue 130μ broad and $24-65 \mu$ high, formed by very large decidua cells (some of these are shown in Fig. 5), and scattered about here and there are few pus cells. The diameter of the large decidua cells was $26.5-32.3 \mu$: $20.6-17.6 \mu$, that of the nuclei 11.8 : $8.8-11.8 \mu$.

If we were now tempted to draw the conclusion that the decidua-like cells in endometritis have their origin in a previous pregnancy, we should, however, be just as much mistaken as if we believed that these cells were always to be found when the commencement of the disease might be dated from a birth or a miscarriage. With respect to this point I need only refer to the cases Nos. II., III., and V., mentioned before, in all three the decidua-like cells were entirely wanting, although the disease, without the slightest doubt, originated in a birth or miscarriage. And as to the former point, that the cells that resembled decidua-like cells really should be descended from genuine decidua cells, we can very easily prove that this is by no means the case. For not only do we find them (or the nuclei, in those cells in which the confines of the cells are not distinct) in patients whose last pregnancy is far

away, whilst they are wanting in others (see Cases I. and IV.), but the decisive point is, *that we can find them in nulliparæ*, nay, in *doubtless virgines intactæ*. To be sure, it is a very difficult matter to be *certain* that a woman is a virgin; but when the genital organs in every respect bear signs of virginity, and when (as is the case in the first-named of the following cases) the family physician, who has known her intimately a very long time, is perfectly convinced of her virginity, then it would be unreasonable to doubt it.

VIII. The patient, twenty-eight years of age, has, during six to seven years, suffered from frequent and lasting attacks of menorrhagia; the uterus is slightly enlarged; no tumors; by aid of the curette great quantities of very thick mucous membrane were removed; it is above 6^{mm}. in thickness; the surface smooth, covered with a low, ciliated columnar epithelium (17.6 μ –7.4 μ); the glands, numerous and very much distended, form the chief mass of the tissue; there are many vessels, chiefly arteries. The interglandular tissue is formed by two kinds of cells, some large ones, resembling decidua cells, others smaller, with dark nuclei; spindle-shaped cells around the glands. Fig. 6 shows partly a group of these different cells, partly some few decidua-like cells and nuclei. If we compare these with genuine decidua cells, the similarity will be striking. Fig. 7 shows a piece of the decidua from a miscarriage in the second month. The cells with dark nuclei are probably pus cells (foul abortion-débris). The decidua-like cells in our virgin were of the following size: One of the largest, 20.6 μ : 17.7 μ ; the nucleus, 10.3 μ : 10.3 μ . The others were 13.16 μ : 12–16 μ ; the nucleus, 7.5 μ –9 μ : 6–9 μ . One more spindle-shaped cell measured 26.5 μ –5.9 μ ; the nucleus, 11.0 μ : 5.5 μ .

The second case of endometritis hyperplastica chronica in a virgin is the following:—

IX. The patient is twenty-three years old; very chloro-anæmic. The catamenia regular, but profuse; last time, twenty-three days ago; a week afterwards a severe hæmorrhage commenced, which has continued since. The genital organs exquisitely virginal. The considerable mass of mucous membrane that was removed proves to consist of numerous twisted glands and many vessels, that suffer from evident endarteritis. The interglandular tissue consists of common cells with round, dark nuclei (some of them are seen in Fig. 1, c), and, besides, of cells resembling those of decidua (Fig. 1, e, and 8). These latter were somewhat smaller than in the preceding patient; they measured 11.8–16.2 μ : 8.8–10.3 μ ; the nuclei, 6.6–9.5 μ : 5.5–7.3 μ . *Leopold*¹ also states a case in which he, in a woman with “virginal genitals,” found cells resembling

¹ Arch. f. Gyn. Bd. II., pp. 119–120.

decidua cells in the uterine mucous membrane; this was during the catamenial period. But I shall later on return to this case.

With respect to those patients who, to be sure, have given birth or miscarried, but where this was a long time previously, and where we cannot regard the endometritis as having any connection at all with pregnancy, in these cases we also find these decidua-like cells. For instance, I may state that I have found this to be the case in a woman seventy-four years old:—

X. She had given birth seven times; the menopause was in her forty-fifth year. She had suffered from hæmorrhage during four months. I found a small mucous polypus, and, besides, the mucous membrane was much thickened. The smooth surface was covered by a tall, ciliated, columnar epithelium ($23.5-26.5 \mu : 3.7-4.4 \mu$); the glands enormously distended; the interglandular tissue consisted of a homogeneous or delicately fibrillated stroma, in which were small, round, deeply-stained nuclei, and others larger, oval, granular, and faintly tinged, lying close to one another. The limits of the cells indistinct. Whilst most of the dark nuclei measured $3.9 : 3.7 \mu$, most of the light ones measured $10.3-5.9 \mu$. In most of the other patients they were larger; the nuclei especially were larger in proportion than they are wont to be in decidua cells. As examples, the following measurements from three patients may be given: $14.0 \mu : 14.0 \mu$; nucleus, $10.3 \mu : 8.8 \mu$. — $11.8-15.0 \mu : 11.0-15.0 \mu$; the nucleus, $7.1-12.0 \mu : 7.4 : 8.8 \mu$. — $18.0 \mu-15.0 \mu$; the nucleus, $11.5 \mu : 6.0 \mu$. These decidua-like cells can also, as stated above, become perfectly spindle-shaped (see Fig. 2). Such a cell measured $35.3 \mu : 5.5 \mu$; the nucleus, $11.8 \mu : 5.9 \mu$. I must here remark that *I have found such cells quite similar to decidua-like cells in the mucous membrane during menstruation*, and I stated above that *Leopold* had made a similar discovery in a virgin, and by chance the menstruating uterus which I examined was likewise that of a virgin. Also, here were found closely-packed nuclei, but it was, however, also possible, in many cases, to see the limits of the cells themselves. There were small cells with small, round, or long-drawn, deeply-stained nuclei, and innumerable transitions from these to large decidua-like cells, with oval or round, granular, slightly-stained nuclei. But most of the dark nuclei were larger than in the healthy mucous membrane I described first, — many of them were 6μ every way (red blood-corpuscles were but 5μ). One of the largest of these decidua-like cells measured $26.6 \mu : 16.2 \mu$; its nucleus, $8.8 \mu : 10.3 \mu$; many measured $14.7 \mu : 11.8 \mu$, with nucleus measuring $9.0 \mu : 8.5 \mu$. Some few nuclei were still larger, $11.8 \mu : 8.1 \mu$.

However, it seems that these decidua-like cells are not always present in the menstruating (nor in the inflamed) mucous membrane, and this is shown by the fact that *Leopold*,¹ in the mucous membrane that he described, which was in the stage immediately preceding menstruation, only found small cells with nuclei that almost filled the whole cell.

As *Leopold*² has found *giant-cells* in the mucous membrane during the catamenial period, and as they are also to be found in the decidua of pregnancy, it seemed reasonable to me to endeavor to find them in my preparations. I was not able to observe any in the deep layers near the muscularis, where *Leopold* chiefly found them, and they were altogether wanting in most of my preparations. I found them in the following two patients only:—

XI. A woman forty years old; three births, the last of which was four and a half years ago; no miscarriage; menorrhagia during the last years' time; the uterus was enlarged; a considerable quantity of mucous membrane was removed; it showed the following structure: The glands were somewhat less numerous than in the normal state, and they were even perfectly wanting in large tracts; the surface was papillomatous and uneven. I shall speak of the superficial epithelium in a subsequent part of my paper. Besides the two common kinds of cells that here, as elsewhere, formed the greater part of the body of the tissue, there were many cells with divided nuclei. This was principally the case close to the surface, where you may see figures resembling the one in Fig. 9. There are large giant cells, formed by fusion of many smaller ones, with divided nuclei. The largest of these giant cells measured 32.4μ : 23.4μ ; another one, 32.1 : 17.7μ . In one of the patients I mentioned above—No. IV.—there were likewise, close under the surface, numerous cells in division (pus cells?), besides giant cells.

What I have described here must be sufficient to confirm the ideas put forward in the above, which I might also express thus: *The interglandular tissue of the uterine mucous membrane is composed of cells that mostly resemble embryonal cells. Like these latter, they are able to suffer many transformations, become spindle-shaped, and so on. But, above all, they seem to be liable, under the influence of irritative processes, normal (menstruation, pregnancy) or pathological (inflammation), to undergo a change, the final stage of which is the decidual cell in its most exquisite form.*

Thus these inquiries lead to results in direct opposition to *Wyder's*³ opinion, that the formation of decidual cells is a phenomenon proper to

¹ Arch. f. Gyn. Bd. II., page 132.

² *Ibid.*, page 116.

³ L. cit.

pregnancy. And they are just as positively in favor of the opinion that the decidua cells descend from the cells of interglandular tissue. As to the latter question, it would lead us too far were I to discuss all that has been written concerning the origin of the decidua cells. I shall, therefore, limit myself to stating that at present most investigators agree with the opinion put forth, for instance, by *Friedländer*¹ and *Leopold*,² which is in harmony with the conclusions at which I have arrived in my investigations. I made them a couple of years ago, although they are only published now; and in the interval two papers have appeared which are devoted particularly to the origin of the decidua cells, which I therefore shall mention shortly. One is by *Overlach*: "Die pseudo-menstruierende mucosa uteri nach akuter Phosphorvergiftung."³ On examining the uterine mucous membrane of a woman who died of acute phosphorus poisoning, he found it in a state which he thinks proper to call pseudo-menstruation (better, perhaps, acute inflammation), and he found numerous cells very similar to decidua cells in the interglandular tissue. With respect to the origin of these cells, he arrives at the conclusion that *they are of epithelial origin*, and he believes that they chiefly descend from the tall, narrow epithelium of the cervix, and wander hence into the mucous membrane of the corpus. I have not a single time in my researches met with anything that could support such an opinion, although I have very often examined the mucous membrane of the upper part of the cervical canal. Nor have I found any other investigator who has confirmed *Overlach's* startling discovery (although, indeed, it is said that decidua can be developed from the mucous membrane of the cervix; thus, in the second of *R. Maier's*⁴ well-known cases, the "Deciduom" originated in the mucous membrane of the cervix). So we must as yet suppose that acute phosphorus poisoning provokes a specific morbid alteration of the uterine mucous membrane, and the results of this cannot, without further ado, be brought to bear on other matters.

The other paper is by *Walker*, and treats of the anatomy of the membranes of the ovum in extra-uterine pregnancy.⁵ He here arrives at conclusions that essentially agree with mine, viz., that decidua cells descend from connective tissue cells, and that we find gradual gradations between these two kinds of cells, whilst the endothelium of the vessels has nothing whatever to do with the origin of the decidua cells.

¹ Physiologische anatomische Untersuchungen über den Uterus. Leipzig, 1871. p. 8.

² Arch. f. Gyn. Bd. 11. p. 150 and pp. 461-462.

³ Arch. f. mikroskop. Anatomie. Bd. 25. pp. 191-215.

⁴ Virchow's Arch. f. pathol. Anat. Bd. 67. pp. 55-71.

⁵ Ibid. Bd. 107. Hft. 1. pp. 72-99.

II. THE LINING EPITHELIUM.

Still less attention than to the interglandular tissue has, with a single exception (*Zeller*, v. i.), been given to the changes which *the lining epithelium* may undergo during chronic endometritis. The only statement usually found about the epithelium lining the healthy mucous membrane of the corpus uteri is, that it is a ciliated columnar epithelium. *Hennig*¹ gives its length from 10–30 μ ; *Moericke*,² from 16–28 μ . The last-named author adds that the shape may be altered by the mutual pressure of the cells.³ About the mucous membrane during *menstruation*, *Wyder*⁴ states that its surface is partly villous, and here and there is lined by a columnar epithelium.⁵ In cases of membranous dysmenorrhœa he has found the epithelium tessellated 12 μ high.⁶ *Olshausen*⁷ mentions that in cases of endometritis fungosa the epithelium does not present changes from the normal state. *Ruge*⁸ states that the surface is lined with columnar epithelium, is smooth or slightly papillary, warty. A more detailed account of the changes which the epithelium may undergo in cases of endometritis is only given by *Zeller*,⁹ and this author has mainly given attention to the appearance of *squamous epithelium* in the womb. However, he states¹⁰ (like *Moericke*) that the cells rarely are *strictly cylindrical*; as a rule they are conical or pyramidal. He further mentions the frequency with which are found excrescences and villi on the surface. With regard to the squamous epithelium, he has very often found it; the cells even often changed into horny scales (wherefore he speaks of an *ichthyosis uterina*). In the same case he now finds columnar and now squamous epithelium, and also both forms beside each other. He has examined four cases of E. fungosa, and in each case he found squamous epithelium.

Though it is now three years since these researches were published, at about the same time that *Küstner*¹¹ had found squamous epithelium lining a mucous polypus springing from the cervical canal, I have not found one single author who has published similar results. *Heinricius*¹² states expressly that he never has found squamous epithelium. It was mainly *Zeller's* paper which made me enter into these researches; but *not in a*

¹ Katarrh der inneren weibl. Geschlechtsorgane. Leipzig, 1862. p. ii.

² Zeitschr. f. Geburtsh. u. Gynäk. Bd. vii. Hft. 1. p. 107 cfr. p. 99.

³ Ibid.

⁴ L. cit. p. 21.

⁵ I shall not here enter further into the dispute, whether the epithelium is lost during menstruation, or whether it remains wholly intact.

⁶ L. cit. p. 26.

⁷ L. cit. p. 104.

⁸ Zeitschr. f. Geburtsh. u. Gynäk. Bd. v. p. 320.

⁹ Ibid. Bd. XL. pp. 56–88.

¹⁰ Ibid. p. 60.

¹¹ Ctrbl. f. Gyn. 1884. No. 21. p. 320.

¹² L. cit. p. 206.

single case have I been able to find squamous epithelium lining the mucous membrane curetted from the corpus uteri.

Before going on to describe the character of the epithelium in the cases of chronic hyperplastic endometritis which I have examined, I shall mention the character of the epithelium in the above-mentioned mucous membrane from the patient who died from uræmia (six months post partum; lactation). The surface was rather smooth. It was lined with a single layer of columnar epithelium; the cells were narrow, not very high. The measurements were $11.7-17.7 \mu$; $3.7-4.7 \mu$ (most of them 14.7 ; 3.7μ). The nuclei measured $6.0-8.8 \mu$; $2.8 \mu-4.4 \mu$. In this place we may perhaps also mention the above-described case (No. I.¹) in which the patient did not suffer from hæmorrhages, and in which the mucous membrane did not differ visibly from the normal one. The ciliated cylindrical cells showed the following measurements: 17.5μ ; 5.9μ ; the nuclei, $6.0-8.8 \mu$; $3.7-4.4 \mu$.

Only in a few of the cases of chronic inflammation examined was the epithelium found so small, or even smaller. In case No. V. the cells measured but $13.7-14.7 \mu$; $5.2-5.6 \mu$; the nuclei, $7.4-8.8 \mu$; 2.9μ . In case No. II. the measurements were 17.7μ ; $4.4-7.4 \mu$; the nuclei, $8.8-12.0 \mu$; $4.2-5.9 \mu$. In case No. VIII., where the surface also was quite smooth, the epithelial cells were proportionally broad, measuring $17.7-19.1 \mu$; 11.8μ ; the nuclei, $5.9-11.8 \mu$; $4.4-6.0 \mu$ (most of the nuclei, 5.9μ ; 5.9μ). In other cases the cells are alike longer and broader than those which we found lining the normal mucous membrane. But sometimes we also find very long and narrow cells. In one case, for instance, the measurements were $22.1-23.5 \mu$; $2.2-3.7 \mu$; the nuclei, $7.4-8.8 \mu$; $1.7-3.7 \mu$; in another case (No. X.), $23.5-26.5 \mu$; $3.7-4.4 \mu$; the nuclei, $10.3-11.8 \mu$; 3.1μ . In this case, where the patient was seventy-four years of age, the ciliated character of the cells was plainly visible, which is at variance with the statement of *Moericke*,² that the epithelium loses the cilia at an advanced age.

Nevertheless, in all these cases the epithelium had still preserved the normal main type. The cells usually stained rather brightly, as did the oblong, frequently granulated nuclei, which were seated near the basis of the cells. In other cases, however, *the epithelium changed character altogether*, the cells took a club-like or fan-like shape, or the epithelium grew villous, etc., as I am now going to describe. The *surface*, too, instead of being rather smooth, frequently had an uneven, papillomatous aspect, which changes could assume a very high degree.

¹ These numbers refer to the cases mentioned in the first part of this paper.

² *L. cit.* pp. 114 and 119.

In the following case the epithelium presented a kind of transition to these abnormal shapes : —

XII. Thirty-six years of age ; has borne two children, fourteen and nine years ago, and miscarried twice, the last time before last child. Suffered for years from severe menorrhagia. The surface is uneven, with broad prominences. The shape of the epithelium is seen in Fig. 10. The measurements are $32.4-36.8 \mu$: $4.4-5.9 \mu$; the nuclei, $11.2-14.7 \mu$: $4.4-5.1 \mu$.

In the following case the epithelium resembled the last one, but the cells had a more fan-like shape : —

XIII. Fifty-three years of age, four deliveries and four miscarriages, the last one ten years ago. One year ago she was treated for menorrhagia by curetting the mucous membrane, but three months ago the hæmorrhage recommenced. The surface is rather smooth. The epithelial cells are long, narrow, partly fan-shaped, with the nucleus near the free, thick end, as seen in Fig. 11. The measurements are $29.4-38.2 \mu$: $3.1-8.8 \mu$ (most of them 4.4μ broad) ; the nuclei, $7.4-16.2 \mu$: $2.3-5.9 \mu$.

In Case IV. it was mentioned that there were found giant cells, and many cells with the nucleus becoming divided just below the epithelium lining the adenomatous parts of the mucous membrane (I was not able to find the lining epithelium of the non-adenomatous parts). The shape of the epithelial cells was polymorphous ; most of them still presented the cylindrical type, but had the free end a little swollen, and from these were found transitions to the club-shaped cells seen in Fig. 12. The measurements of these four cells varies from $22.0-35.3 \mu$: $3.7-8.8 \mu$; the nuclei, $10.3-14.7 \mu$: $2.9-5.5 \mu$.

In the following cases the character of the surface and the epithelium is still more different from the normal state : —

Case VII. is mentioned in the first part of this paper. The surface is partly rather smooth, partly it offers smaller and larger prominences, and this, combined with the circumstance that the openings of the glands are dilated into a funnel-shape, may produce such an appearance as the one seen in Fig. 13, where one of the prominences is narrowed at the basis like a little polypus. The lining epithelium is polymorphous to such a degree that we may find cells of very different types in the same section. A large part of the surface is lined with a low, proportionally broad columnar epithelium. The measurements are $11.8-14.7 \mu$: $4.4-7.4 \mu$; the nuclei, $5.5-7.4 \mu$: $3.7-5.1 \mu$. Near up to these cells long and very narrow cells may be found measuring 23.5μ : 1.5μ ; the nuclei, 11.8 : 1.5μ . Further on we find fan-shaped or pyramidal cells (Fig. 14), with a long process at the basis, and transitions from these to long, narrow, fan-

shaped cells, and from these again to the long, narrow, cylindrical cells already mentioned. The cells with processes are (the process included) 20.6–26.5 μ long (whereof the process, 5.9–11.7 μ), 3.7–8.5 μ broad; the nuclei, 5.9–8.8 μ ; 3.7 μ . The long fan-shaped cells are 23.5–26.5 μ long, 2.2 μ broad near the basis, 5.9 μ at the broad end; their nuclei measure 8.8–10.3 μ ; 1.5–4.4 μ . In the adenomatous parts from this patient I have not been able to discover the lining epithelium.

Case XI. is also mentioned in the first part of this paper, and the giant cells found direct under the surface were described and figured (Fig. 9). The surface itself is rarely smooth, most frequently uneven, with broad papillæ, but never to such a degree as in the case last mentioned. The character of the lining epithelium varies very much, but most frequently its character is like that seen in Figs. 15, 16, and 17. The shape of the single cells resembles mostly a club, but they appear like separated bushes, and frequently seem to spring radially from an edge, which runs vertically through the middle of such a bush (like a Christmas-tree), through which the surface of the membrane receives a villous aspect. Such epithelial bushes may reach a height of 121 μ ; the ones seen in Fig. 15 are 88.2 and 85.3 μ high. The measurements of the single cells are 32.4–41.2: 8.8 μ . In other parts we find a nearly true columnar epithelium: the measurements are 14.7–20.6 μ ; 6.0–8.8 μ ; the nuclei, 7.5–9.0 μ ; 4.5–7.4 μ . From these cells transitions are again found to very long and narrow cylindrical cells (29.5–47.0 μ ; 3.0–4.1 μ ; the nuclei, 9.0: 29 μ); and from these again to long, club-shaped cells, 32.4–44.1 μ long. The part of the mucous membrane poor in glands is lined with a stratified epithelium of pear-shaped cells. The epithelial layer is 29.4–41.2 μ high; the height of the single cells is difficult to measure, but they are 8.8–9.0 μ broad; the nuclei measure 9.0–10.3 μ ; 6.0–8.5 μ .

In Case VI., where we find a placental polypus, parts of the mucous membrane were lined with a bushy, villous epithelium similar to that described in the foregoing case. The cells were club-shaped, with the nucleus at the dilated end. The measurements of these cells are 14.7–20.6 μ ; 4.4–5.9 μ ; of their nuclei, 5.9 μ ; 2.9–3.7 μ . Other parts of the surface of the mucous membrane present broad, flat papillæ, lined with columnar epithelium, whose cells measure 14.7–17.7 μ ; 5.9–7.4 μ ; their nuclei, 8.8 μ ; 3.0–5.5 μ .

As was to be expected, these researches prove that *the lining epithelium takes a great part in the morbid changes going on in the mucous membrane during chronic inflammation*. Not only that the surface can become uneven, papillous, nearly polypous, — not only that a lively throwing off and regeneration of epithelium takes place, but the

epithelium may change character altogether: its cells may become long and thin, or narrow, short, and broad; may take a pear, a club, a fan shape, etc.; and, lastly, it may present a bushy, villous character.

EXPLANATION TO THE PLATES

ILLUSTRATING DR. LEOPOLD MEYER'S PAPER ON THE MORBID ANATOMY OF
CHRONIC ENDOMETRITIS.

FIGURE 1. Small round cells with brightly-staining nucleus. Magnified 550 times.

- a.* From Case XII.
- b.* From Case XI.
- c.* From Case IX.
- c.* Decidua-like cells.

FIG. 2. Gradual transition from round to spindle-shaped cells (Case XII.), and transition from spindle-shaped to decidua-like cells. Magnified 550 times.

FIG. 3. True decidua cells (Case VI.). Magnified 550 times.

FIG. 4. Piece of decidua in the mucous membrane (Case VII.). Magnified 30 times.

- a.* Decidua.
- b.* Lining epithelium.
- c.* Section of gland.
- d.* Large blood-vessel.

FIG. 5. Decidua cells, from *a*, Fig. 4. Magnified 550 times.

FIG. 6. Different kind of cells from Case VIII. Magnified 550 times.

FIG. 7. True decidua (inflamed). Magnified 550 times.

FIG. 8. Decidua-like cells, from Case IX. (compare Fig. 1, *c* β). Magnified, 550 times.

FIG. 9. Giant cells, etc., from Case XI. Magnified 550 times.

FIG. 10. Lining epithelium, from Case XII. Magnified 550 times.

FIG. 11. Lining epithelium, from Case XIII. Magnified 550 times.

FIG. 12. Lining epithelium, from Case IV. Magnified 550 times.

FIG. 13. Surface of the mucous membrane (Case VII.). Magnified 110 times.

FIG. 14. Epithelial cells, from Case VII. Magnified 550 times.

FIGS. 15, 16, and 17. Lining epithelium, from Case XI. Magnified 550 times.

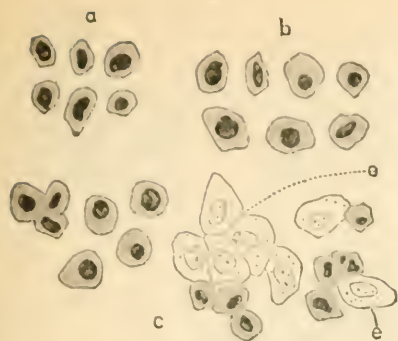


Fig. 1.



Fig. 2.



Fig. 3.

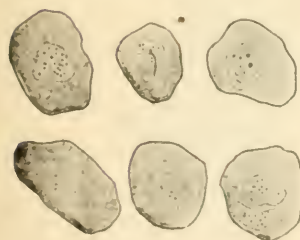


Fig. 5.

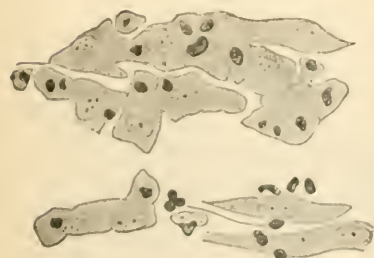


Fig. 7.



Fig. 8.



Fig. 4.

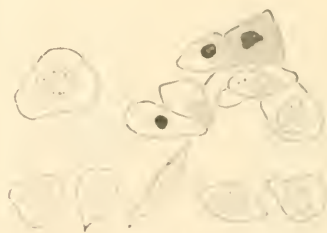


Fig. 6.

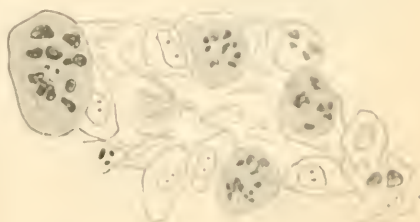


Fig. 9.



Fig. 10.



Fig. 11.



Fig. 12.

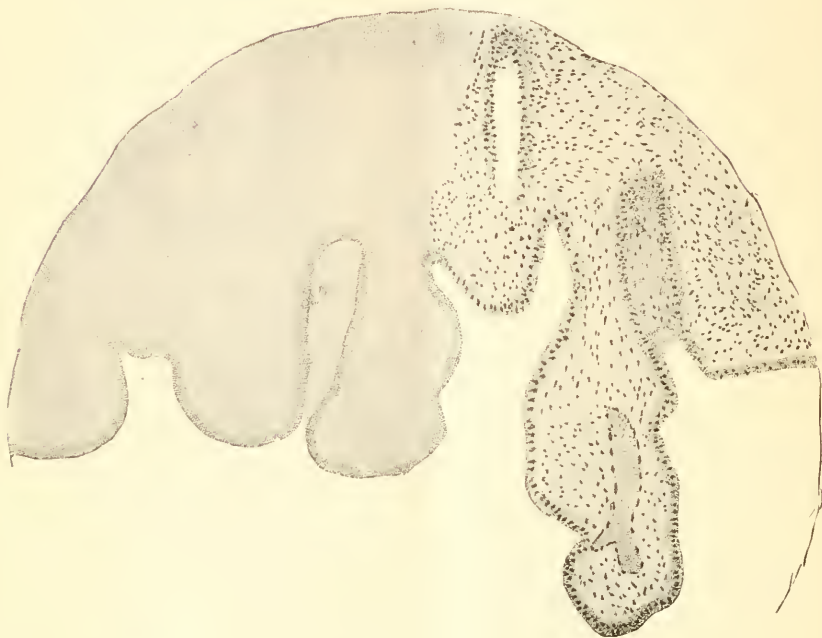


Fig. 13.



Fig. 16.



Fig. 14.

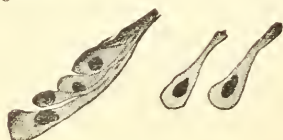


Fig. 17.



Fig. 15.

DISCUSSION ON DR. DOLERIS' PAPER CONCERNING
ALEXANDER'S OPERATION.*Am. Gynecological Soc., Sept. 12, 1887.*

Dr. WM. L. REID, of Glasgow: "One of the most important points to which attention should be called, is that even when a successful operation has been performed in a case of chronic retroversion, you must not expect the patient to feel quite well in the course of a few weeks. All that the operation does is to restore the position of the uterus. It does not alter its condition. The patient will probably be no better three months after the operation than before it, especially if care is not taken.

"The principal difficulty in the operation is to find the ligaments, for, after leaving the inguinal canals they divide extensively. If you dissect down upon the ring, a good many of these fibres are destroyed. The dissection should be made clear of the abdominal ring, until the tendon of the oblique muscle is reached. Then, by pressing on the canal, a little fat is forced out: this can be picked up carefully and the fibres of the ligament separated, and usually there is no difficulty. The after treatment is most important. If you take a case of prolapse with the uterus down to the woman's knees, shorten the ligaments and allow her to be about in two weeks; you need not be surprised if the trouble is soon reproduced. The patient should be kept in bed five or six weeks, and afterwards she should wear a well-fitting pessary for five or six months. A pessary that before the operation could not be kept in place one hour, will remain without difficulty after the operation."

Dr. A. MARTIN, of Berlin: "I have not performed this operation, but my colleagues have done it in a small number of cases. I should not object to performing the operation when a suitable case presented itself. From my experience I am led to believe that we exaggerate the importance of prolapse. I have seen many cases where the patient suffered this displacement without discomfort. I do not think that an operation on the ligaments, without restoration of the pelvic floor, will give a certain hope that the uterus will be retained within the pelvis. In these cases I perform Hegar's operation. We cannot retain the uterus in its place either by narrowing the introitus of the vagina, or by narrowing the canal. It is only by a restoration of the pelvic floor that it can be retained. Hegar's operation consists in making a strong cicatrix in the floor of the pelvis, and I have performed his operation with satisfaction."

Dr. WM. T. Lusk, New York: "I have performed Alexander's operation a number of times. The operation is simple and easy to perform, except where there is great atrophy of the abdominal walls. I consider it absolutely devoid of danger, if performed with ordinary cleanliness. There is no reason why this operation should not be employed in cases where a pessary will not remain. I have done Hegar's operation, but I have never found that the cicatrix has prevented sagging down of the uterus. If the uterus is held forward after Hegar's operation, I think that the prolapse will be overcome."

Dr. C. C. LEE, New York: "I have done Alexander's operation about nineteen

times. The operation is indicated in those cases where a pessary cannot be borne on account of the abnormal tenderness of the vaginal vault, although no distinct pelvic peritonitis or cellulitis can be detected. It may be used in cases of retroversion of the uterus with chronic salpingitis, which cannot be cured without laparotomy. It is also to be employed in a limited class of cases where there is complete procidentia, and where the usual plastic operations have failed to keep up the uterus. In such cases, where there is a laceration of the cervix, I do not attempt to do Alexander's operation, without, at the same time, closing the tear. Where the uterus is bound down by adhesions, this operation is not indicated."

Dr. HOWARD A. KELLY, Philadelphia: "I have done this operation for three years. It is folly to expect a heavy uterus to be held over a large, open canal, by two ligaments. If the cervix is hypertrophied it must be removed. Suitable operations should be performed on the vagina. In the case of a heavy uterus the round ligaments acting at right angles to the organ are at a disadvantage, when we attempt to raise the womb. In one case, therefore, I substituted hysterorrhaphy, with entire success."

PART OF DISCUSSION ON ALEXANDER'S OPERATION.

Ninth Int. Med. Cong., Sect. for Gynecology.

Dr. TRENIHOLM said he regretted not being able to endorse the eulogistic and eloquent remarks of the reader of the paper. He said he hardly knew how to take up the subject, in view of the fact that women in Canada did not seem to be made in the same way as in this great country, to which we were so near akin. His own experience of the operation had not been a flattering one, and this he coupled with the fact that one able medical man, who conducted the anatomy room of one of our colleges, had found that in twenty-seven dissections the round ligament was absent in eight cases. If, upon further examination, so large, or even a smaller proportion be found, he said that a most damaging blow would be struck against the future of this operation.

HOSPITAL REPORTS.

CASES OF ALEXANDER'S OPERATIONS REPORTED BY F. L. BURT, M.D.,
HOUSE SURGEON, MURDOCK FREE HOSPITAL FOR WOMEN, BOSTON.

CASE I. Alexander's operation for procidentia. Mrs. D., a native of Ireland, now of Cambridge, is about 55 years of age. Always healthy; menses at 17½; menstruation regular till last appearance, seven years ago; some pain usually during periods, and duration six days; three children. She was admitted to the hospital on April 11 last, when examination showed the following conditions: Perineum ruptured; the whole vaginal membrane greatly elongated and thickened; large vesical and rectal

pouches; complete procidentia causing the birth of a tumor about the size of an infant's head, and covered with a membrane which had become thoroughly hardened and leather-like from long exposure. She complained of soreness in the groin, frequent urination with pain, pain in the back, and pain on standing or walking. After thoroughly lubricating the tissues the parts were replaced and held in position with tampons of cotton covered with vaseline.

Operation May 14: The ligaments were easily found and were drawn out three inches, the loop being packed in the wound. A No. 5 Lister catgut was used for a deep suture through the ring and to secure the ligament, and a No. 4 gut for the external wound. Iodoform was dusted into the wound, and iodoform-collodion and cotton was applied externally. The vagina was packed with dry cotton coated with vaseline, to hold uterus in place. May 18 the sutures were cut externally because of a tenderness and redness indicating a slight septic process, and a small piece of tissue sloughed off.

Both sides healed perfectly, and the operation seemed successful in holding the uterus. Patient was allowed to get up in a month; but very shortly afterwards the organ began to descend, and about July 1 it suddenly became completely prolapsed again. The vagina was packed to hold in position until July 8, when other operations were performed. It was thought wise to do anterior colporrhaphy and restore the body of the perineum. A large triangular flap was removed from the anterior vaginal wall, and the corresponding edges were sutured with silk, interrupted.

Perineum was then restored by splitting the recto-vaginal septum, elevating the thick vaginal wall, drawing the sides of the wound together by deep-buried catgut sutures, so as to build up a solid floor of the pelvis. No tissue was removed from the post-vaginal wall, and the whole of the latter thus remained in situ, so as to almost fill the vagina. The vulvar orifice was much narrowed, and the parts, after retracting during the healing process, left the introitus in a natural and satisfactory condition, and gave sufficient strength of perineum to sustain the parts.

Since the operation there has not been the slightest indication of a return of the former state of prolapse. Nov. 1 patient is active and well; but on the left side there is a weakness of the abdominal ring which threatens development of hernia.

CASE II. Mrs. S., of Cambridgeport, is 39 years of age, and is the mother of two children. She has been suffering from her present troubles for the last four years, and is growing worse. Menses at 15. Always very irregular. Severe pain one or two days before flow. Last period March 24 to April 7; but usual duration a week or less; considerable

leucorrhœa; bowels extremely constipated. She was admitted to the hospital April 11. Examination shows that the uterus is increased to about six times the normal size, is retroverted, and held down below the promontory. The tissues are extremely sensitive, in no condition to wear a pessary, and thus far the latter have been of no avail. She complains of pain either standing or walking; bearing-down pains in limbs and pelvis. She has been under treatment of many kinds; has been in different hospitals, in one of which she was kept in bed for six months, and all modes of treatment had been employed, even cauterization of spine and extension of the body. Her case was thought to be one very favorable for the Alexander operation, which, after a little preparatory treatment, was performed April 18. The ligaments were easily found on both sides, and were surrounded with a considerable quantity of fat. Ligaments were drawn out two and one-half inches, and were treated as in Case I., except that the deep suture was of whale tendon, while the external one was of catgut. External wounds were sealed, and a pessary applied to help to hold the uterus forward and upward. Parts were very sensitive after the operation, as was to be expected, but the healing was perfect.

She was discharged June 17, feeling only a little relieved; too early, however, to decide the matter, for the process of involution and recovery from congestion was just beginning, and at the end of three months she was said to have recovered completely, now she is doing housework and feels strong and well.

PUBLISHERS' NOTICE.

WE take this opportunity to again announce to our readers that, by permission of the distinguished author, we shall soon commence the publication of the "Pathology and Therapeutics of Diseases of Women," of *Dr. August Martin, of Berlin*. This will appear as a monthly supplement of 24 pages to the ANNALS OF GYNÆCOLOGY, separately sewed, although included in the same cover, at an additional price of one dollar, to such of our subscribers as specify that they desire the supplement. Those who do not desire it will receive the ANNALS in its present size. The translation as it appears will receive such additions and alterations from the author in the matter of statistics, etc., as the state of science may demand, forming the first authorized American from the 2d German edition. The 210 illustrations will not be mere copies, but from electro-types from the original plates.

ANNALS OF GYNÆCOLOGY

A MONTHLY REVIEW

GYNÆCOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY.

EDITED BY

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BOSTON.

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JANUARY, 1888.

CONTENTS:

	PAGE		PAGE
TREATMENT OF THE PEDICLE IN MYOMOTOMY. <i>G. A. Dirner, M.D.</i>	145	REPORTS OF SOCIETIES	159
STODDALE vs. BAKER	150	TRANSLATION.—A Contribution to the Safe Vaginal Removal of the Body of the Uterus. <i>Martin</i>	171
HISTORY OF TWO CASES OF EXTRA-UTERINE PREGNANCY. <i>Prof. A. M. Bernays</i>	151	The Enucleation of Intra-Parietal Myomata according to Martin's Method. <i>Chapman</i>	181
LAPAROTOMY FOR ENCYSTED SUB-PERITO- NEAL HÆMATOCELE. <i>Augustin H. Goelet, M.D.</i>	157	On the Time which should elapse between the Operations of Version and Extrac- tion. <i>Dohm</i>	191
TREATMENT OF THE PEDICLE IN SUPRA-VAGI- NAL HYSTERECTOMY. <i>George G. Bantock, M.D.</i>	163	EXTRA-UTERINE PREGNANCY AND ITS TREAT- MENT BY ELECTRICITY. <i>E. J. Van de Weyer, M.D.</i>	195
DISCUSSION ON DR. BANTOCK'S PAPER. <i>A. Martin, M.D.</i>	174	THREE CASES OF TUBAL PREGNANCY Hospital Reports	197
EDITORIAL.—Tubal Pregnancy	166	Publisher's Notes	198
CORRESPONDENCE	167		

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We refer to the Essay read before the International Medical Congress, at Washington in 1887.

Extract from Essay read before the British Medical Association at Brighton, England, 1885
By the Vice-President of the American Medical Association — (Discussion followed by leading members from Germany, England, and United States) :—

"For the last four years I have been using, in the preparatory and after treatment of about 200 cases of surgical operations, a preparation well known as the Liquid Raw Food (MURDOCK LIQUID FOOD COMPANY, Boston). This I consider as one of the most valuable dietary preparations within the reach of the surgeon. It is made of beef and mutton in the raw state prepared at a very low temperature, and combined with fruits which act as a preservative. The State Inspector of Food in Massachusetts, in his annual report for 1885, gives the following analysis of this preparation :—

" Albumen	14.10
Alcoholic Matter	1.97
Organic Matter	16.45
Ash	0.42

"At a glance it will be seen how much valuable life-supporting material is concentrated in it, and what great blood-making qualities it has. In May, 1885, I had the honor to report before the Connecticut State Medical Society 79 capital operations, in which I depended almost entirely on this form of alimentation, with only three deaths. The operations included a large range of surgical cases, all involving the integrity of life or limb, and including several of the rare and more difficult operations."

Extract from Essay read before the American Medical Association at Richmond, Va.,
G. R. Shepherd, of Hartford, Conn. :—

"In presenting these cases, gentlemen, I have no pet theory to advocate, nor any hobby ride. They are simple facts from my personal experience, in relation to the use of certain food extracts that I believe are not as well known to the profession as they should be, and in offering them to you it is with a simple desire to add a little to the general fund of practical experience and with the hope that some of you, at least, may find these foods of as much service in your daily practice as I have in mine."

Extract from letter in regard to Essay read before the American Medical Association
Washington, D.C., by B. N. Towle, M.D., of Boston :—

"GENTS, — In answer to your inquiry as to what form of Raw Food I used in obtaining results reported in my paper read before the American Medical Association at Washington, D.C., I reply that I used several forms, but the one I relied upon was your Liquid Food."

"I am sure that a judicious use of your food will be the means of saving many valuable lives, and that no ethical sensitiveness as to the names of persons producing valuable combinations should deter me from stating the name of the preparations from which these results have been obtained.

"Respectfully yours,

B. N. TOWLE, M.D.



Plate I.

10



Plate II.





Plate III.





Plate IV. — Fig. 1.



Plate IV. — Fig. 2.



ANNALS OF GYNÆCOLOGY.

VOL. I.

JANUARY, 1888.

No. 4.

ON THE TREATMENT OF THE PEDICLE IN MYOMOTOMY.

BY DR. G. A. DIRNER, BUDAPEST, HUNGARY.

I HAVE already touched upon this question in a paper published in the "Centralblatt f. Gynæcologie." 1887, Nos. 7 and 8, which contains a report of thirty-one cases operated upon at the clinic of Professor W. Tauffler in Budapest. From the results obtained in these cases I drew the conclusion that the extra-peritoneal was preferable to the intra-peritoneal method, although, before the publication of the above paper, the question appeared to have been settled definitely in favor of the intra-peritoneal mode of treatment, which had come to be generally looked upon as the *ideal* method.

At the conclusion of my paper I said:—

"In the supra-vaginal amputation of myomatous or non-myomatous uteri, and, I will add, of puerperal septic uteri, we shall employ only the extra-peritoneal mode of treatment of the pedicle, this being the only one which secures us against hæmorrhage or sepsis. Until the intra-peritoneal method shall have been improved so as to produce as good results as its rival, we do not intend to jeopardize the lives of patients by trying new experiments. Until this be accomplished, we shall regard that method as the *ideal* one which furnishes the best results, and at the present time it is the extra-peritoneal procedure which answers this description."

On a journey made subsequently, during which I visited nearly all the universities of Austria, Germany, Switzerland, Belgium, and Holland, I paid especial attention to this question, and, from what I saw and heard, I came to the conclusion that it is not settled yet, and that at the present time there is a change of opinion occurring generally in favor of the extra-peritoneal method of procedure.

In one of the attractive lectures which I heard Professor Breisky deliver in Vienna he advocated the extra-peritoneal method. Professor Braun, of

the same place, has also since published the favorable results he has had with it. Professor Kaltenbach, late of Giessen and now of Halle, who has for some time been inclining towards the intra-peritoneal method, has again become a staunch adherent of the extra-peritoneal mode of procedure, and has excellent statistics to support this opinion. Professor Hegar, who has inaugurated the most important improvement in this method since it was first introduced by Péan, has ever since been its most unshaken supporter. I have also seen a letter written by Professor Fritsch in Breslau to Professor Hegar, in which he confessed to have joined the extra-peritoneal ranks, though he had formerly been a strenuous advocate of the other method, which he also recommended in his "*Lehrbuch der Frauenkrankheiten*." In Dresden, I saw Leopold employ the extra-peritoneal procedure, though he differs from Hegar in regard to details. I could also name a number of well-known surgeons, besides Bantock and Keith, who still favor the extra-peritoneal procedure as the best and safest, or who have been converted to it.

On the other hand, we find many prominent names on the side of the intra-peritoneal method. Professor Schröder, whose early death we all deplore, has done the most of all to perfect it, but still lost 32 out of his first 100 cases. A. Martin, whose sure and quick hand, perfect technique, and simple armamentarium I had occasion to admire during my visit last spring, is an indefatigable defender of the intra-peritoneal method. According to the report published by Dr. Orthmann ("*Deutsche Med. Wochenschr.*," 1887, No. 12), Martin has had a mortality of 24 per cent. out of 150 myomotomies of every description, and only 10 per cent. in his last series of 30 cases of supra-vaginal amputation of the uterus.

Without mentioning any more names, I may call Berlin the intra-peritoneal school. Olshausen, while yet in Halle, was already known as one of its most influential teachers. Hofmeier, now of Giessen, Schröder's best-known pupil, probably regards the cultivation and improvement of this method as a sort of legacy from his teacher, and will certainly do his best to make it perfect. I heard also Peter Müller, of Berne, praise and teach the intra-peritoneal method.

This is sufficient to show that there are influential names arrayed on both sides of the question, and that the latter is far from being definitely settled as yet. A great deal of discussion and accurate and unexceptionable statistics of new cases will be required before the question can be settled. The statistics, as usually published in text-books and also in original communications, are of no avail in deciding such a question as this, because the cases massed together in these statistics are of a varying

description, and not comparable among themselves. It is mere trifling to make up statistics out of material of this kind.

And yet, in deciding questions of this sort, we cannot do without statistics, because, after all, in surgical operations of every kind, the results are the main consideration. The patient asks: Shall I get well? or rather, Shall I survive? and every humane surgeon will be guided by these interrogatories.

The final question is, therefore, this: After which mode of treatment of the pedicle do the largest number of patients survive? In a statistical comparison of cases made for this purpose the cases which have been published in pre-antiseptic times ought not to be taken into consideration at all, neither should the cases of certain operators who have treated isolated cases, or only a small number of them. Only such statistics as show a rigid and methodical classification will be of real value. He who will undertake such a work will find it very hard labor, and he must not expect any thanks for it.

Here is a plan of classification which I would propose: —

A. Myomotomies —

- (1) for pedunculated pendulous fibromyomata.
- (2) for sub-peritoneal fibromyomata with broad bases.

B. Hysterectomies for interstitial fibromyomata —

- (1) without opening the uterine cavity.
- (2) including the opening of the uterine cavity (supra-vaginal amputation of myomatous uterus).

C. Hysterectomy of uteri not containing fibromyomata.

- (1) Septic puerperal uterus (case of Schultze of Jena).
- (2) Uterus lacerated during progress of ovariectomy (Tausfers' 4 cases, *Centrbl. f. Gyn.*, 1887, Nos. 7 and 8).

D. Enucleations —

- (1) of cervical myomata growing underneath the pelvic peritoneum and into the pelvic cellular tissue.
- (2) Incising uterus for the purpose of enucleating deep-seated interstitial or submucous fibromyomata.

Only cases belonging to the same heading are to be compared among themselves as regards the results of different modes of treatment of the pedicle. Cases of myomatous uteri removed per vaginam do not belong to this subject at all, unless we form an eighth group, for the purpose of considering the question whether the total extirpation per vaginam is not a less serious undertaking than supra-vaginal amputation by laparotomy.

As I observed above, not all cases published could properly be used in a classified statistical comparison such as the one I propose. I think

that it would suffice to take only the cases of the most distinguished representatives of either side of the question, and leave out of consideration the cases of operators who have less than 25 or 30 cases to show. Only those who have had a larger number of cases can be supposed to have so thoroughly mastered the details of technique, that their results may serve as a cynosure for their pupils and disciples. No cases should be considered except those that have been operated upon with aseptic and antiseptic measures, nor unless they belong to a continuous series numbering at least 25 cases, minutely described, so that they can be accurately classified.

I do not believe that such a statistical comparison will markedly turn the balance in favor of one method of treatment or the other. The important question will then present itself: Which mode of treatment offers the best chances in the hands of an inexperienced operator? I think that this momentous question will be answered in favor of the extra-peritoneal mode of treatment, as there is no doubt, it seems to me, that this prevents hæmorrhage and sepsis more securely than the other method, and these two points decide the final result of the operation. All the other points that come into consideration as regards difficulty and length of after-treatment, protracted convalescence, ventral hernia, and other matters, are of minor importance.

Below I publish a translation of the statistics of the 30 cases operated upon by Professor Tauffers, of Budapest, whose assistant I have been for five years.

	Intra-peritoneal Treatment of Pedicle.	Cured.	DIED.			Mortality per Cent.		Extra-peritoneal Treatment of Pedicle.	Cured.	DIED.			Mortality per Cent.
			Total.	Sepsis.	Other Causes.					Total.	Sepsis.	Other Causes.	
4	Myomotomy .	4	.....	.....	.....	.....	4	Myomotomy.	4	.....	.....	.....	.....
7	Amput. supra-vag. ut. myom.	3	4	3	Volvulus. 1	57% [Sepsis 43%]	14	Amput. supra-vag. ut. myom.	12	2	...	2	14%
1	Enucleation..	1											
12		8	4	3	1	33%	18		16	2	...	2	10.5%

From this table it will be seen that my conclusions, given above, are well founded.

Before extirpating the tumor or amputating the corpus uteri, the elastic ligature was always applied at the level of the inner os. Formerly this was done in two portions with the aid of Kaltenbach's needle, but more recently the whole pedicle was compressed by a single ligature. In some cases a lance-shaped needle was introduced to prevent the slipping up of the ligature. The amputation was carried out two fingers' breadth above the ligature, so as to leave as much as possible of the peritoneal lining. The cut surface was smoothed by removing redundant muscular tissue. Sometimes deep myomatous nodules had to be enucleated at this stage. It was rarely found necessary to secure bleeding vessels. The stump was now drawn up by a pair of Museux (three-pronged) forceps, and the peritoneal cavity cleansed. The ovaries were removed, if necessary, and the stumps of the broad ligaments either returned into the pelvic cavity or else stitched to the wound. The stump of the uterus was now sutured to the parietal lamina of the peritoneum by means of catgut or fine silk, in the following manner:—

A double thread was carried through the parietal lamina of the peritoneum, at the lower corner of the incision, and looped into a knot. The stump of the womb was now carried into this corner, and one end of the thread was used to stitch one side of it to this abdominal wound, beginning below the elastic ligature and proceeding towards the head, whilst the other end was used for the other side of the stump. The two threads were tied at the upper margin of the stump, and one end employed for a continued suture of the peritoneum for the whole remaining length of the incision. The stitching of the stump was done with a fine semicircular needle, and included the entire visceral lamina of the peritoneum, but as little as possible of the muscular tissue underneath. Deep suturing would have caused hemorrhage. The stump was fixed in the wound by two lance-shaped needles introduced at right angles above the elastic ligature, and the edges of the incision were united by a suitable number of sutures, — one or two being required below the stump. The stump itself was surrounded with dry cotton containing 10 per cent. chloride of zinc, and its cut surface painted with a 30 to 50 per cent. solution of the same chloride, care being taken that none of the solution ran down the sides of the stump. The opened uterine cavity was then plugged with a tuft of cotton saturated with a strong solution of zinc chloride. The rest of the wound was dressed in the usual manner.

This first dressing was left undisturbed for from five to seven days, unless there was a special indication for removing it. When the stump was inspected it was found to have become hard and dry. The portions

of the abdominal wall immediately surrounding it had sloughed, granulations having usually formed already beneath the slough. From this time on the stump was dressed with strips of iodoform gauze and trimmed with scissors. The elastic ligature came off between the ninth and twelfth day. The lance-shaped needles were not removed before this time. The funnel-shaped cavity now remaining soon filled with granulations, and to hasten the reparative process the edges of the wound were approximated by means of adhesive plaster. This treatment requires from four to five weeks, and it is rather tedious work to change the dressing almost every day, but the result amply repays the labor.

STOGDALE *vs.* BAKER.

THE medical profession generally has cause to rejoice that after a most patient hearing the jury has rendered a verdict for Prof. Baker. For the fourth time this most impudent and vexatious suit has been brought up, and is now finally settled, as it should have been at the first trial. Briefly stated, the action was for damages ensuing from the removal of plaintiff's ovaries and tubes (pyosalpinx) in 1882 by Dr. Baker, at the Free Hospital for Women in Boston, as she alleged unwarrantably, unnecessarily, without her consent, against her protest, and to her injury. There was really nothing on which to base the suit except a tissue of downright untruths, calling into play the morbid sympathy of would-be philanthropists, and affording basis for the nebular hypotheses of learned counsel, crammed for the occasion with recondite learning about dysmenorrhœa and Tait's and Battey's operations, and vainly imagining some wonderful means of communication between a ventral hernia and a supposed periodical vaginal geyser. Although the easiest way by which the whole matter can be explained is by the theory that the woman was a liar, yet the charitable may follow the suggestion of the most learned judge, who, in charging the jury, after contrasting the directly opposing testimony of the plaintiff on the one hand, and that of fifteen or twenty witnesses on the other, suggested that if her statements were found to be unworthy of belief, it was not necessary to decide whether she was guilty of intentional falsehood or the victim of some hallucination or delusion.

On the side of Dr. Baker appeared Doctors Reynolds, Homans, Warren, M. Richardson, J. G. Blake, Davenport, Elliott, Strong, Swift, and Cushing. No physician was found, except a certain person named Kidder, to support the cause of the plaintiff with his alleged scientific opinion. The gratifying unanimity of the medical profession was an important factor in securing a just decision. It is to be hoped that the lesson may not be lost, that when doctors do *not* disagree juries can decide.

THE HISTORY OF TWO CASES OF EXTRA-UTERINE PREGNANCY.

BY PROF. AUGUSTUS C. BERNAYS, A.M., M.D., HEIDELBERG,
M.R.C.S., ENG., OF ST. LOUIS, MO.

CASE I. M. M., age 23, unmarried, of good constitution, was seen for the first time by the family physician, Dr. H. M. Starkloff, on the 18th of December, 1885. The following condition of affairs was found: Patient was suffering from severe pains in the abdomen, which were caused, as she thought, by imprudent lifting. Her pulse was 115, temp. 103.1° F. She had a moderate flow of menses at this time, was constipated, and complained of headache. A mild cathartic was administered and hot fomentations applied over the abdomen.

December 19: Pulse 100, temp. 101°: pains lessened.

Ordered 15 grs. quinine and an opiate.

December 20: Pulse 90, temp. 101°: pain much lessened; quinine and a mild sedative continued.

December 21: Pulse 90, temp. 99°: patient feeling well. She continued to improve, and spent the Christmas holidays with her family, being apparently in good health, but having a slight, bloody discharge from the vagina during all this time.

On Jan. 5, 1886, the doctor was called again, and describes the course of the case, until I was called in, as follows: "Patient was in most severe abdominal pain and was vomiting. Knowing patient's lively temperament, I thought that she had been rather assiduous in her devotions to the holiday festivities and had perhaps overloaded her stomach, and treated the case as before. The next day the pain increased, and, as there was still a slight bloody discharge from the vagina, I insisted on a vaginal examination. The digital examination revealed absence of hymen, womb low, cervix long, as normal, a soft bulging tumor in Douglas' *cul-de-sac*, and the womb crowded up against the symphysis. No increase of pain on pressure upon the swelling. Having been positively assured by the patient and her mother that her menses had always been regular up to the present illness, and having myself seen the bloody discharge ten days previously, no suspicion of pregnancy entered my mind. I, therefore, did not hesitate to introduce a probe the next day, and this proved positively that the interior of the womb was normal, about three inches long, and empty. I thus arrived at the conclusion that the patient had a retro-uterine hæmatocoele or a pelvic abscess.

"Next day, January 7, all the symptoms were worse; there were signs of peritonitis, the abdomen was slightly distended and very painful on being touched; pulse 116, temp. 103.2°.

"On the morning of Jan. 8 the inflammatory symptoms were more extended in the abdomen; it became tympanitic. I now informed the parents that an operation would be necessary, and had Dr. A. C. Bernays sent for."

I will now resume the story, and describe what I found on my arrival:—

At about 11 o'clock, on Jan. 8, 1886, I made an examination of the patient with Dr. Starkloff, after hearing the story above related. The pulse was then 120, temp. 102.5°. The girl was suffering intensely, her abdomen being tympanitic. The digital examination of the vagina revealed that there was considerable bloody discharge; that the womb was crowded down and forwards against the symphysis, while the posterior *cul-de-sac* and half the vagina was filled with a soft, doughy tumor, which seemed to be as large as two fists, and could be felt above the pubes in the abdominal cavity, apparently filling the true pelvis, and not movable.

The patient was at once put under the influence of chloroform, and, during the progress of the anæsthesia, the mother said that it was possible that her daughter might have been seduced by a young man who had visited them in October. This was the first intimation either Dr. Starkloff or I had in regard to a possible pregnancy. The patient was placed across the bed in Simon's extreme lithotomy position, her thighs flexed upon her abdomen. The largest size Sims' speculum was employed, and I introduced a probe into the uterus. It passed a distance of about three and one-half inches into the womb, which was crowded against the bladder, and could be plainly felt under the abdominal parietes, the fundus containing the probe being readily made out two inches above the symphysis. This fact again dispelled from our minds all suspicions of a pregnancy, and we felt sure that there was a large, retro-uterine hæmatocele, which had undergone a suppurative degeneration, or had, perhaps, perforated towards the abdomen. I proposed to aspirate through the vagina for diagnostic purposes, and, if we found blood or pus, to make a free incision and drain the cavity.

The aspirator was used in the part which seemed to fluctuate most clearly, about four inches to the rear of the os uteri. The large needle passed into the tumor about two inches, but no pus was found. The fluid which we drew off was dark, decomposed blood, having a most offensive odor. This seemed to confirm the diagnosis of hæmatocele, and the evacuation and drainage of the *cul-de-sac* was undoubtedly indicated. I

made an incision in the median line, beginning at the neck of the womb, and extending a distance of three and one-half inches, down to the rectum. A mass of coagulated and decomposed blood poured into the vagina, and I removed several additional handfuls with my fingers.

The cavity was constantly washed out with a four per cent. carbolic-acid solution during this process. By dint of patient, hard work I succeeded finally in getting my whole hand into the vagina of the nullipara, and also forced it into the incision, and to my great surprise I delivered a partially decomposed fetus of about two and one-half months' gestation. By careful work with my fingers, I also removed a great many fragments of the membranes. I am sure that the sac did not communicate with the abdominal cavity; but I am equally sure that the upper wall of the sac was formed by two or three loops of small intestine, which were matted together and shut off from the peritoneal cavity by adhesive circumscribed exudations. The operation lasted one hour and twenty minutes, and was concluded by washing out the sac with carbolized water until all bleeding was arrested and the liquid returned colorless. The insertion of a drainage tube seemed unnecessary, since the incision had been dilated by the hand to such an extent that it stood wide open. The womb fell back somewhat from the anterior parietes, but did not nearly reach its normal position. The posterior wall of the womb had indeed formed a part of the anterior wall of the cavity in which the fetus was found.

The patient rallied very slowly from the operation, her temperature in the evening being 104.5° , pulse 120. She felt chilly; was evidently septic; and Dr. Starkloff, who conducted the after-treatment, expected her death during the night. By means of stimulants by the mouth, and hypodermic injections of ether, she was nursed through the night. In the morning her temperature had fallen to 101° , and pulse to 114. She continued to have high fever and delirium for ten days, during which time there was a copious and putrid discharge from the cavity in the pelvis. This was treated with frequent carbolic-acid irrigations, and the sac began to contract, and finally closed after about five weeks. During the first three weeks there was also a discharge of a bloody fluid from the womb, but it never had a bad odor at all. The patient made a complete recovery, and was well a year after the operation. In looking back over this case, we must conclude that there was a tubal pregnancy, and that the attack on December 18th was probably a localized peritonitis, caused by the bursting of the wall of the Fallopian tube. The ovum itself, however, may have remained intact at this time, the extravasated blood from the hyperdistended and ruptured tube filling Douglas' *cul-de-sac*, and becoming enclosed by a circumscribed peritonitic exudation, in which the small

intestine, the uterus, and broad ligaments were involved. On January 5, the fœtus having died and decomposition setting in, the ovum burst, and that, probably, caused the infection and decomposition of the existing hæmatocele, which in turn will account for all the symptoms above related. This is undoubtedly a case of auto-infection, and goes far towards proving the fallacy of the so-called "Axiom," which says: "An auto-infection is impossible after a normal labor," and which endeavors to fasten the responsibility for the infection upon the attendant in every case. *Ahlfeld*,¹ by his classical works, established the existence of auto-infection in obstetrical cases beyond the peradventure of a doubt.

There have been but few similar operations reported in foreign or American literature. I am indebted to Dr. Robert P. Harris, of Philadelphia, for the following table of five cases from American literature:—

1. 1816. Edisto Island, S.C. *Dr. John King*. Operation at maturity; placenta removed, woman and child saved. Variety probably subperitoneal. (N.Y. Med. Repository, 1817, p. 388.)

2. 1875. New York. *Prof. T. G. Thomas*. Section made with Paquelin thermo-cautery knife; placenta partially removed, severe hæmorrhage arrested, woman saved; fœtus in early months. (N.Y. Med. Jour., 1875, pp. 561-569.)

3. 1878. Philadelphia. Late *Dr. Albert H. Smith*. Section as above, and through placenta; fœtus found below stomach; woman lost. (Am. Jour. Obstet., 1878. Vol. xi., p. 825.)

4. (?) Philadelphia. *Prof. D. Hays Agnew*. Fœtus mature, but dead; woman did well for a week; accoucheur injected 2 gr. per oz. solution of manganate of potassium; violent pain; death from peritonitis in twenty-four hours. (Agnew's Surg. Vol. 2.)

5. 1881. *Dr. J. H. Mathieson*. St. Mary's, Ontario, Canada. Fœtus mature; placenta removed; variety probably as in No. 1; woman and child saved. (Lancet, May 24. 1884, p. 940.)

In my own case the indication for the operation was vital, and the patient was undoubtedly saved from death by septicæmia, by the prompt surgical interference. Had the diagnosis of extra-uterine pregnancy been made at the first attack, on December 18, I am afraid I might have been tempted to perform a laparotomy, which would most likely have terminated fatally.

CASE II. Mrs. J. N. was married when 19 years of age. She became pregnant soon afterwards and was prematurely delivered of a living child of about six and one-half months' gestation. About one year afterwards she again became impregnated and again miscarried at about six or seven months, the child living only a short time. In 1876

¹ *Berichte und Arbeiten*. Vol. ii, u. iii. Leipzig, F. W. Grunow, 1887, and *Beitrag zur Lehre von der Selbstinfection*. Centralblatt, No. 46, 1887.

her husband, being in affluent circumstances, took her to Germany, where several of the great gynæcologists were consulted. These gentlemen made careful examinations and gave advice, but could not make a satisfactory diagnosis. After her return to St. Louis she remained barren, but was always more or less a gynæcological patient. Some of her physicians said that she had retroflexion; some thought there was a chronic metritis with enlargement of the uterus.

The winter of the year 1885 and 1886 Mrs. N. enjoyed unusually good health; but, in the beginning of April, 1886, she began to complain of the usual molimina of an incipient pregnancy. She had headache, toothache, morning vomiting, and some hysterical manifestations of temper. Dr. H. Wichmann, the family physician, an experienced and careful practitioner, was called in. The patient told him that she was pregnant, but that she wanted him to do something for her vomiting.

The doctor treated her, making daily visits from April 13 to May 1. Her vomiting, however, grew worse and worse, and the doctor was often called twice per day in the beginning of May, when the patient had fainting spells, bordering on complete collapse. These fainting spells were always ushered in by a peculiar colicky pain in the lower part of the abdomen. They grew more frequent and more alarming day by day; the vomiting also was incessant, and the patient grew very weak. A slight muco-sanguineous discharge became noticeable; and, in fact, there was some little bleeding from the womb about May 15. The patient now insisted that she must have permanent relief; and although she, as well as her husband, was extremely desirous of offspring, she demanded of Dr. Wichmann that he produce an abortion on her. The doctor thought this operation clearly indicated, and on May 17 he introduced a Sims' speculum, and through it a uterine probe, and much to his surprise found the womb empty, and the cavity only about half an inch longer than normal. As a matter of course he told his patient that she was not pregnant. On May 18 she had three fainting attacks, and was constantly vomiting. On May 20 she insisted on another examination, which was made with the same result as before. On May 21, in the morning, she again had an attack of syncope, which was very severe. During all this time the patient was able to walk about her room and take light exercise. On the morning of May 22, before daybreak, Dr. Wichmann was called to his patient, and found her collapsed. He succeeded in reviving her, but was soon enabled to diagnose a severe intra-abdominal hæmorrhage, and was compelled to admit to the perfectly conscious patient that she would die in a few hours, if not sooner. The lady, with remarkable fortitude, then told the doctor that she desired to have a careful autopsy held on her

remains, for she felt certain that none of her doctors had ever thoroughly understood her case, and she thought that an examination might be of benefit to the science of medicine.

On Sunday morning, May 23, at the request of Dr. Wichmann, I performed the post-mortem with the assistance of Drs. Bremer and W. H. Heidorn. It was one of the most interesting post-mortem examinations I ever performed, and it brought to light a unique specimen, which is beautifully illustrated by the photograph Plate I., for which we are indebted to the skilful and conscientious work of Dr. M. G. Parker.

The incision in the median line from the jugular fossa to the symphysis pubes laid bare the cavity of the abdomen, and the visible organs were seen to be pale, bloodless, totally exsanguine. After the omentum was laid back, the abdominal cavity was nearly filled by a firmly-contracted cake of blood, which was continuous, and a perfect mold of the intestines. It was lifted out, and weighed, perhaps, ten pounds. All the organs were normal in structure, as were also the organs in the chest. The source of the hæmorrhage was discovered to be the ruptured sac of a tubo-abdominal pregnancy of about three and one-half or four months' gestation. The rent in the sac was about one and one-half inches in length. The ovum had developed in the fimbriated extremity of the left Fallopian tube. The sac had grown towards the left into the abdominal cavity. The blood had poured forth from the torn margin of the placenta. The uterus proved to be a *bipartitus et unicollis*. The two uterine bodies were so nearly alike that it is impossible to state in which of the two the former pregnancies had taken place. There was a well-developed decidua in both of the uteri. There is nothing about the os uteri to indicate, in the least particular, that there are two distinct corpora above. Each uterus has one Fallopian tube, and there are two well-developed normal ovaries. A study of the photograph will enlighten the reader concerning the relative shape and size of the anatomical structures concerned in the specimen.

A search of the literature of extra-uterine pregnancy has failed to show a similar case. *The case is unique, in the particular that we find a uterus bipartitus et unicollis, complicated with a tubo-abdominal pregnancy.*

The history of the case is peculiarly instructive, and the lessons which are to be learned from it are numerous. I will leave them for elucidation to some more experienced hand, and to one who is so situated that he can devote more time to the theoretical part of our science than I, who am a slave to its practice.

ST. LOUIS, MO., December, 1887.

LAPAROTOMY FOR ENCYSTED SUB-PERITONEAL
HEMATOCELE. — RECOVERY.

BY AUGUSTIN H. GOLLET, M.D., NEW YORK.

Mrs. MAGGIE N., of Bath, N.Y., aged 25 years, married five years, with one child born nine months after marriage, consulted me August 9, 1886, for an enlargement in the abdomen on the left side. She has had no miscarriages, and has menstruated regularly since the birth of her child, even during the period of nursing, which was for one year; but she has never felt right since.

In the first part of July last, after menstruating for two days, the flow ceased suddenly, and she did not see anything for five days, when it re-appeared. Since then it has been brought on by much exertion. About the middle of July she was taken with severe pain in the lower part of the abdomen, which was so constant and intense that she was compelled to go to bed and call a physician, who told her she had inflammation. She states that she has noticed the enlargement in the abdomen for several months previous to her recent illness. After her acute pain had subsided, her physician told her the womb was out of place, and advised her to seek advice in New York. After she had been out of bed three days she started for this city.

Examination of the abdomen showed a tumor on left side, nearly on a level with the umbilicus, which was about the size of a cocoa-nut, and very firm. By the vagina the same tumor was felt to the left and posterior to the cervix, which was crowded forwards against the pubes. At the lowest part it was soft and fluctuating, but higher up it was firm and apparently adherent to the uterus.

She was seen by my friend, Dr. C. C. Lee, who confirmed my diagnosis of cystic tumor, but suggested exploratory tapping through the vagina immediately before operating to differentiate it from soft fibroid.

Wednesday, Aug. 25, at 11 A.M., the patient, after having been thoroughly prepared and etherized, was placed upon the table, and the tumor exposed through a Sim's speculum over the pubes. An exploring needle of large size, attached to a hypodermic syringe, was introduced, and some dark, grumous-looking fluid withdrawn. It was decided to proceed with the operation. Every antiseptic precaution was observed. The spray had been used in the room (patient's house) for one hour previous

to commencing the operation. The abdomen was shaved, scrubbed, and washed with a solution of mercuric bichloride, 1 to 2,000. An incision three inches long was made down to the peritoneum, which was opened after oozing had ceased. The tumor, which could not be exposed to view through the small opening, was found very adherent, apparently to the uterus. In attempting to separate the supposed adhesions the sac was opened, and some dark fluid escaped into the abdominal cavity. Catching up the sac quickly it was tapped with the trocar, but nothing escaped; pressure forced out some blood-clots around the canula, and it was at once seen that we had to deal with an hæmatocele. The sac was now completely emptied and a puncture made through the bottom into the vagina, and a large drainage-tube inserted which projected from the vulva. The rent in the peritoneum through the sac wall was carefully closed with catgut suture, but with considerable difficulty, as the walls were weak from overstretching, and in many places would tear in pulling the sutures through. The peritoneal cavity was thus shut off from the sac cavity as completely as was possible. The peritoneal cavity was carefully sponged out, a glass drainage-tube inserted to Douglas' pouch, the peritoneum closed with a continuous gut suture, and the abdominal wound closed by an interrupted sublimated iron-dyed silk suture. Two sutures were left untied, to be tied after the removal of the drainage-tube. The wound was dusted with iodoform, covered with iodoform gauze and absorbent cotton-batting, and the whole covered with protective tissue strapped in place by adhesive plaster. Over this was placed a bandage, leaving the mouth of the tube exposed. A piece of sheet-rubber, pieced with a hole for the drainage-tube, was placed over the whole to protect the dressings from any discharge. The sac cavity was now flushed with a 2% solution of carbolic acid through the tube in the vagina. Some of it returned by the vagina, but some escaped by the abdominal tube, showing that the peritoneal cavity was not completely shut off from that of the sac; but the drainage from both tubes was perfect. To allow the peritoneum to unite and make the closure perfect, it was decided not to wash out the sac cavity for several days, or at least not until the discharge should become offensive. The operation was completed at 12.30 P.M.

She reacted quickly, but vomited somewhat, which caused much distress. Ice in small pieces ordered. Temperature at 6 P.M. was $99\frac{3}{4}$. The urine was drawn, and morphia, $\frac{1}{8}$ gr., and atropia, $\frac{1}{200}$, given hypodermically. About half an ounce of bloody serous was removed from the abdominal tube, and there was some oozing from the vaginal tube.

August 26. At 9 A.M., as will be seen by the chart, the temperature was $99\frac{1}{2}$. The urine was drawn. She vomited once only during the

night previous, but otherwise had rested comfortably. She was allowed only cracked ice and sips of hot water. There was no discharge in abdominal tube, but still some oozing of serum from vaginal tube. P.M., urine drawn.

August 27. Urine drawn at 6 A.M. No discharge in abdominal tube. The sac was flushed with a 2% solution of carbolic acid, and, as it showed no connection with the abdominal cavity, the abdominal drainage-tube was removed, the loose sutures tied, and the dressing applied. She was allowed milk in small quantities often repeated.

At 6.30 P.M. an offensive odor was noticed about the vaginal tube, and the temperature was 101. She complained of flatulence. The sac was washed out with a solution of carbolic acid. The urine was drawn and a hypodermic of morphia given.

August 28. At 6 A.M. the temperature was the same as previous evening; the urine was drawn because the patient could not pass it herself, and the sac was washed out with a solution of carbolic acid. At 10 A.M. the temperature had gone to 102½, and at 3.30 P.M. to 103½, in spite of repeated washings with carbolic-acid solution. A smaller rubber tube was inserted through the larger drainage-tube to the bottom of the sac, and it was thoroughly washed out with a solution of mercuric bichloride, 1 to 2,000. At 9.30 P.M. the temperature was three degrees lower. The carbolic-acid solution was used, and a rectal tube inserted to relieve an annoying accumulation of wind.

August 29. She had passed urine for the first time at 4 A.M., and the nurse had washed the cavity with the carbolic-acid solution. A solution of bichloride was used at 8 A.M., and the temperature was only 99½.

At 3.30 P.M. she complained of nausea and faintness, and the temperature was 102½. The discharge from the drainage-tube was purulent and offensive. The nurse had neglected to wash out the sac since 8 A.M. Used bichloride solution, 1 to 4,000, and gave morphia hypodermically. At 9 A.M. the temperature was 102, and the cavity had not been washed out since 3.30. Ordered the washing of the cavity to be done every four hours with a solution of carbolic acid, 2%.

The following morning the temperature was found to be 100, where it was kept for the next two days by these repeated washings. No bichloride was used.

September 1. We find the temperature still at 100, and the patient's condition was good. The bowels were emptied by enema the day before. She was allowed to take crackers and milk freely. The repeated douching continued.

The dressings and some of the sutures of the abdominal wound were removed. The union was perfect. The wound was washed, dusted with iodoform, and redressed with absorbent cotton, adhesive strips, and a bandage.

September 2, P.M. The temperature will be found on the chart at 101. The cause was a neglect of the nurse to use the douche as often as ordered. The bowels were emptied by a full dose of citrate of magnesia.

September 5. The rise of the temperature to 102 was again traced to neglect on the part of the nurse during the previous night. At evening, as the temperature was still at 102, and the douching had been repeated every four hours, a solution of bichloride, 1 to 4,000, was used. The next morning the advantage of the bichloride is noted by a reduction of the temperature to 99 $\frac{3}{4}$. The remaining abdominal sutures were removed, but the union of the integument at the site of the drainage-tube was not good. Strips of adhesive plaster used, and dressed as before. On the evening of the 6th the temperature is again found at 102, and was traced to a neglect of the nurse. A solution of bichloride used freely reduced it to 100 the following morning.

September 8. The tube was found stopped. It was removed and replaced by two smaller tubes fastened together, — one shorter, for the inflow, and one longer, reaching to a basin at the side of the bed, for the outflow. The suppuration is very profuse, and the bichloride solution is used once a day.

September 9. While flooding the sac an accident occurred which could not at first be accounted for. Water escaped from the abdominal wound and wet the dressings; removing them, it was found to come from a small opening, the size of a pin-head, at the lower angle of the wound between the site of the two lower sutures. A teaspoonful of pus escaped upon pressing. When the sac was flooded, water escaped from this opening, bringing with it pus and small broken-down blood-clots. A careful examination convinced me that there was no connection with the peritoneal cavity, and the conclusion was reached that there was a fistulous track between the abdominal wound (under the peritoneum) and the sac of the hæmatocele. As the drainage downwards was believed to be perfect, the abdominal opening was closed by pressure, and a tight bandage applied.

September 12. It became necessary to insert a small drainage-tube in the small abdominal opening, which was discharging pus freely. Cavity douched every six hours; once a day with bichloride.

September 15. Sometimes water injected by the small abdominal

wound escaped by the vaginal tube, but at other times it would not flow through.

It is noticeable on the chart that the temperature was not above $100\frac{1}{4}$ from the 9th of September to the 17th, and that it was a little higher in the evening than the morning. During this time the bichloride solution was used once a day, in the evening, when the temperature was found up, and carbolic acid solution in the morning. The drainage was good, and the cavity was douched only three times a day.

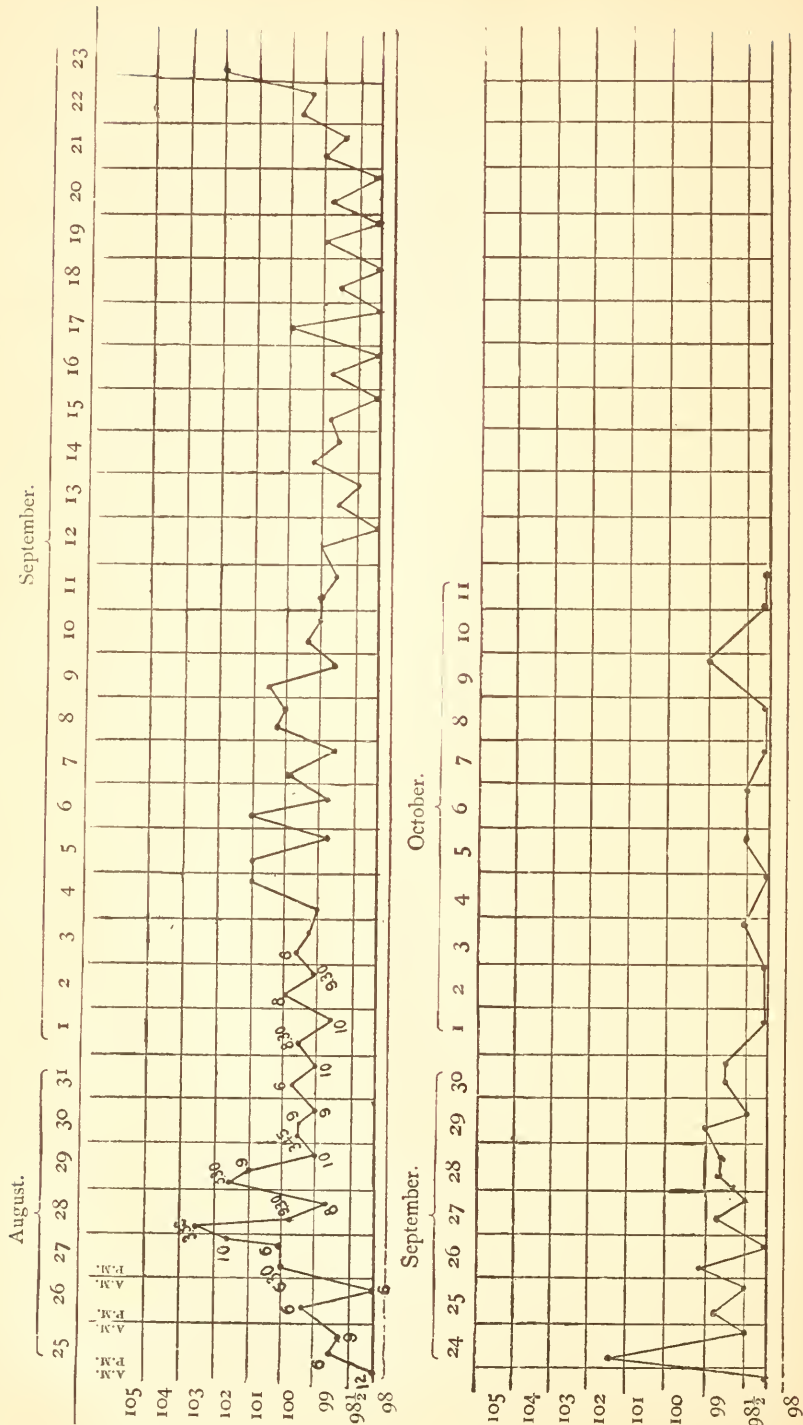
In the evening of September 17th the temperature went to 101, and the cause was found to be an obstruction in the drainage-tube. A thorough washing with a solution of bichloride, 1 to 2,000, reduced it to $98\frac{1}{2}$ the following morning.

September 22d the tubes had slipped out, and the drainage was imperfect.

September 23d the tube had again slipped. The patient was constipated, and complained of nausea. An enema was given during the day, which did not act. She had vomited, and could not retain anything on her stomach. Twenty grains of quinine were given by rectal suppository. This produced a copious evacuation of the bowels, and the next morning the temperature was $98\frac{1}{2}$. But in the evening (September 24th) the temperature was up again ($102\frac{1}{2}$), and she complained of flatulence. Believing the rise to be due to disturbance in the bowels, a laxative was given, which was followed by a decline to 99 the following morning.

October 10th the patient began to menstruate, and the temperature went to 100, but the following day it was again $98\frac{1}{2}$. The flow was not profuse, and there was no pain. The duration was three days.

The vaginal tube ceased to discharge October 25th, and was removed. Two days later the patient was allowed to get up. The abdominal opening discharged a little for a week afterwards, without a drainage-tube, and then closed up. There was no trace left in the pelvis. The uterus had resumed its normal position, but had not regained its mobility.



The figures nearest the dots of temperature represent the time of day it was taken.

THE TREATMENT OF THE PEDICLE IN SUPRA-VAGINAL HYSTERECTOMY.

Report of a Paper read before American Gynecological Society, September, 1887.

BY DR. GEORGE GRANVILLE BANTOCK, OF LONDON.

THE surgical treatment of fibroid tumors of the uterus has attracted a great deal of attention during the last ten years. Considerable progress has been made in the last three years, mainly in the treatment of the pedicle. In his first operation the speaker ligatured the pedicle, applied the cautery, split the pedicle into an anterior and posterior portion and brought these together with sutures. The patient died four days later of septic poisoning. It is a peculiarity of uterine tissue that it shrinks under strong pressure. In this case the ligatures soon became loose, and then there was oozing into the peritoneal cavity. In the next case the pedicle was tied in three portions and surrounded by a silvered copper wire and transfixed with two long needles. It was brought into the lower angle of the wound. Thirteen hours after operation there was a free flow of blood, which was arrested by the cautery. On the ninth day, as the copper wire did not make sufficient pressure, a wire ecraseur was substituted, and this succeeded in reducing the size of the stump. As now performed the operation consists of surrounding the pedicle with a soft iron wire attached to a small ecraseur, by which the wire can be tightened. Before cutting away the pedicle it is important to transfix it with needles to prevent the wire from slipping. After the body of the uterus is removed the pedicle is secured in the lower angle of the wound. In some of the cases reported the pedicle, which at the time of the operation was two or three inches in diameter, was reduced to one-third of an inch in diameter when the wire came off, at the end of the eighteenth or twentieth day. The author did not think that the operation could be improved by substituting the intra-peritoneal method of treating the pedicle. Thirteen cases of pediculated fibroids treated by the extra-peritoneal method recovered, while two treated by the intra-peritoneal method died.

With reference to the after-treatment of the pedicle Dr. Bantock said that, if the pedicle is properly secured at the time of operation, the less it is interfered with the better. The *serre-noeud* should not be touched in less than four or five days, unless there is oozing, in order not to disturb the adhesion of the peritoneum. If there is bleeding, it usually occurs within a few hours. If the pedicle is thick, it may be necessary to tighten the wire. When the stump comes off, the dry

or wet method of treatment may be employed. The former consists in dusting iodoform on the part; the latter consists in washing the part with a solution of sulphurous acid. 1: 9, and then applying equal parts of rectified spirits and glycerine.

The author's statistics were as follows: 57 cases of supra-vaginal hysterectomy, with 45 recoveries and 12 deaths. In five of the fatal cases there was pronounced disease of the kidneys; in one there was acute enteritis; in two there was hæmorrhage; in one there was obstruction of the bowel; and in two, septicæmia.

DISCUSSION OF DR. BANTOCK'S PAPER ON THE TREATMENT OF THE PEDICLE IN SUPRA-VAGINAL HYSTERECTOMY.

BY A. MARTIN, OF BERLIN.

THE principal objection to the dropping of the pedicle is the danger of hæmorrhage. This danger, I think, need not exist. In Berlin it is the practice to treat the pedicle by the intra-peritoneal method. In performing this operation I surround the pedicle with Esmarch's constricting apparatus. The tubes and broad ligaments are carefully ligatured above the elastic band. In removing the body of the uterus a V-shaped excavation is made in the cervix. The upper portion of the cervical canal is then dissected out and the lower portion carefully disinfected. The cavity thus formed is brought together with buried sutures. Next, the two flaps of the cervix are united by deep sutures, and then the edges of the peritoneum are brought together. In this way danger of hæmorrhage is avoided. An India-rubber drainage-tube is passed through Douglas' pouch and through the vagina. I think that the method of fixing the pedicle will have little influence on the development of sepsis. Many of these patients die from the effects of their disease. The intra-peritoneal method of treating the pedicle is certainly the ideal method. In the treatment of ovarian tumors the intra-peritoneal method was first employed, and then a great advance was thought to be made when it was treated outside; but now the general rule is to drop the pedicle in these cases.

Up to the end of 1886 I had 84 supra-vaginal amputations of the uterus. Of this number, 10 died of sepsis, and 17 died of collapse following embolism. This series includes a number of very unfavorable cases. Of my last 34 supra-vaginal hysterectomies I have lost three.

Dr. A. R. SIMPSON, of Edinburgh: "I do not think that we can say that either method of treating the pedicle is best in all cases. Each case must be decided by the conditions met with in that particular case. I think that in the treatment of fibroid tumors the clamp will hold its ground, for the reason that in

this way the pedicle can be secured in a much shorter time, and this is an important point.

"Dr. Bantock has objected to the use of iron. I agree with him that the solution of the perchloride should not be used, for it is difficult to confine a liquid to the desired point; but the persulphate in the form of a powder does not offer this objection. I have used this in combination with iodoform and bismuth powdered over the stump with entire satisfaction."

Dr. WILLIAM GARDINER, of Montreal: "My experience amounts to only five or six cases, but in these I have used the clamp, and so far I have seen no reason to change my mode of procedure. The best results so far have been obtained from the extra-peritoneal method."

Dr. MATTHEW D. MAXN, of Buffalo: "I have had eight ¹ cases in which I have removed the uterus, or a fibroid tumor from the uterus. In my first case I used the clamp; but in the second, tempted by a small pedicle attached to the fundus uteri, I tied, cauterized, and dropped the pedicle. Six hours later I was obliged to open the abdomen, as the woman was in a state of collapse from hæmorrhage. After cleaning out the abdomen I found the pedicle, from which the ligature had slipped, and secured it by a clamp. The tumor weighed 15 pounds. In a recent case I removed two tumors from the fundus uteri, tying the pedicles with catgut. The tumors were both small, the largest weighing less than a pound. In this case I removed both ovaries and tubes at the same time, as there were several other tumors in the body of the uterus so firmly imbedded in the pelvis that it did not seem justifiable to attempt their removal. There was no hæmorrhage. All the others were treated with the clamp, and all the cases recovered. Although my experience with the clamp has been so favorable, I cannot but admit that the intra-uterine method possesses many advantages. I recently saw Dr. E. W. Cushing, at the Murdock Hospital, sew off the uterus close to the vaginal junction. There was no after-hæmorrhage, and the method seemed to commend itself. From what I saw in this case, and especially from what Dr. Martin has told us, I shall certainly try this plan; but it does not seem to me to be applicable to all cases. In the after-treatment of the stump I have rubbed it with iodoform, packed cotton around it and left the surface exposed to the air. In this way it dries quickly and becomes perfectly hard."

Dr. G. G. BANTOCK, of London: "I would call attention to the fact that while my mortality from the extra-peritoneal method of treating the stump has been 12 in 72 cases, that of Dr. Martin in the intra-peritoneal method has been 27 in 84 cases. The number of cases is, however, not large enough to be of much value. The proportion of septic cases with the intra-peritoneal method was greater than that with the extra-peritoneal method. In regard to the use of iron, I believe that it is a mistake to apply anything to the stump. If the pedicle is properly trimmed, it becomes as hard as horn in two or three days. The greatest care should be taken in bringing the edges of the peritoneum accurately together so that nothing may pass down from the stump."

¹ Dr. Mann has brought his statistics up to date of publication.

EDITORIAL. — TUBAL PREGNANCY.

OF all the grievous ills which may imperil the life of a woman or the credit of her physician there is, perhaps, nothing connected with gynæcology worse than an extra-uterine gestation. Many men in active practice have never met with a case, and many more have only recognized it when too late. Nevertheless such occurrences are much commoner than is generally supposed, for usually only the fatal cases are recognized. The symptoms, when well marked, are definite enough, and easy to understand, especially *afterwards*. Whoever has been in attendance where a pregnant tube has ruptured will never forget it, — the patient pallid, collapsed, fainting, yet conscious, and with unclouded intellect, writhing with pain, and prescient of impending death, taking leave of the astounded husband and the weeping children; the physician troubled, embarrassed, helpless, in the presence of a great misfortune, evolving with difficulty a diagnosis, and uncertain which this may be of divers kinds of death

— crudelis ubique

Luctus ubique pavor et plurima mortis imago.

By the skill of Dr. Parker, and through the courteous permission of Dr. W. F. Whitney, the curator of the pathological museum of Harvard Medical School, we are able to present in this and the following number of the ANNALS photographs of seven most interesting specimens of tubal and interstitial pregnancy, besides the unique specimen furnished by Dr. Bernays.

In nothing is the contrast between the old gynæcology and the new more marked than in considering this subject. The records of the late J. B. S. Jackson, who prepared and put away in the museum, which is his monument, the specimens which we study to-day, seem really Hippocratic in their brevity, accuracy, and in the simple way which the inevitable death is announced. No thought of interference, no suggestion that these women might easily have been saved by prompt operation, or by an early diagnosis and arrest of foetal development. How changed is the sentiment to-day may be seen in the papers of Dr. Bernays and Van der Warker, and the discussions on the latter and on that of Dr. Currier.

CORRESPONDENCE.

WE have received from a valued correspondent a communication which, as it undertakes to represent the views of a large number of general practitioners, we will answer somewhat at length. He says:—

“ You are *too scientific*,— in other words, *rare cases* and *surgical operations*, such as a *common physician* never sees, and never would undertake to operate on, are the principal things reported. Give us something for our cases of headache, backache, flying pains, and stomach troubles accompanying uterine disease, — something that will help us in meeting the *every-day cases* of all kinds of troubles in the female, and your magazine will fill a long-felt want. Make it a magazine for the younger practitioners. Give us *R's* for the common ailments, just as they are met with in office-practice, and such remedies as are used successfully by specialists of large experience. You will win favor for your undertaking, and convey much information that the older specialists deem of *too little* importance to the younger men in medicine.”

Now, in answer to this, we will assure our correspondent and others, who may be of his opinion, that the ANNALS OF GYNÆCOLOGY will not be unmindful of the interests and wants of the general practitioner, and that its success must evidently depend, ultimately, on the support of a number of readers far in excess of those who are specialists in gynæcology. At the same time it must be observed that the treatment by drugs of the various reflex symptoms of uterine disorder, such as are mentioned above, is merely palliative, and, as a rule, not very successful. We remember once to have heard the elder Hebra describe, in his inimitable way, how the older physicians would not treat freckles, but turned them over to their junior assistants, *tyronis est ephelides curare*; and why? — because they could not be cured permanently.

Now, in the same way, few men of eminence care to claim much benefit from drugs in relieving reflex uterine neuroses, unless they can also remedy the local disorder.

With regard to general and constitutional treatment, the admirable chapters in the works of Emmett, Thomas, Barnes, and others remain as true now as when they were written, and they are now the common property of the profession. The recent advances in gynæcology have been rather in the way of a clearer comprehension of pathology, and a more general resort to surgical procedures, made possible by the recent

progress in surgery itself, and by a realization of the truth of the old maxim that cleanliness is next to godliness, and of the fact that clean hands are to be considered as worthy to rank with a pure heart in gynæcology, as well as elsewhere. Physicians who will treat their female patients intelligently must study the pathology of women's diseases, and have a realizing sense of what can be done for them by surgery. It is very true that most general practitioners will not undertake to operate, but let no man despise a knowledge of the rarer cases.

It is a serious error to suppose that such do not occur in ordinary general practice, or in that of young physicians. On the contrary, the accurate diagnosis and clear comprehension of a rare case is often the means of establishing the reputation of a young physician, even if he personally does not perform an operation in case he thinks one necessary. Unhappily the reverse of this is also true, and many a worthy practitioner has suffered grievously for failing to properly understand some uterine disorder which he was industriously treating, until it passed into the hands of some competitor and was quickly cured.

It is precisely in order that the ANNALS may cover the whole field of gynæcology that we have obtained permission from Dr. Martin to publish his work, the scope of which is fully set forth elsewhere in this number. We can heartily recommend it, and, if the descriptions of operative procedures do not interest a large proportion of our readers, yet an exact knowledge of the present state of surgery in diseases of women, its capabilities and limitations, is an essential part of the professional training of every general practitioner who will do his whole duty by his patients and mayhap avoid grievous blame.

We repeat, then, that it will be the aim of the ANNALS to furnish what the well-equipped physician wants and needs; until now it has certainly been devoted very much to surgical questions, largely because hardly any others were discussed in the great gatherings of eminent gynæcologists held this summer. But the months roll on, and if our readers will have patience they will find that, as in this number, other questions will be treated in their proper time, so that if possible all may be satisfied.

REPORTS OF SOCIETIES.

At a meeting of the Obstetrical Section of the New York Academy of Medicine, Thursday evening, September 22, a paper was read by Dr. Andrew F. Currier, of New York, entitled "An Erroneous Diagnosis in a Case of Abdominal Pregnancy." The patient in question was an English-woman, 27 years of age, married 4 years, and sterile until the ectopic gestation occurred. She came from a phthisical family, and had been an invalid since marriage. She had been under treatment at intervals, for more than a year, for retroversion and fixation; and while the retrospect of the case *post mortem* showed symptoms indicative of pregnancy, they were also such as not infrequently arise from such a displacement with its history of inflammation. She was seen in consultation by the reader of the paper two weeks before her death. An incomplete examination was made, owing to the excessive pain which the slightest manipulation caused. The existence of gestation was not discovered until the autopsy, when a well-developed fetus of the fourth to the fifth month was found, the cyst which enclosed it receiving its nourishment from a large bunch of small vessels which was attached to the small intestine. The development was to the right of and anterior to the retroverted uterus, which was crowded into the hollow of the sacrum; the right fallopian tube was elongated, but not enlarged, and with no evidence, either external or internal, that rupture had ever occurred; there was no trace of the right ovary, and the left ovary and tube were normal. This shows that an extra-uterine pregnancy need not be primarily tubal, as Tait has asserted. The influence of such factors as retroversion, precedent sterility for a series of years, and the predominance of abdominal pregnancies upon the right side, were referred to as useful points in making a diagnosis of such a condition. In respect to the treatment of such cases two courses were possible, — the expectant or let-alone method, and operative measures. Of the latter, either electricity or the knife was available. If the former plan were adopted, choice must be made between the primary and the induced currents; the former seeming to the reader the more rational, though the latter has been used in the larger number of recorded cases. The inability to tell in a given case the number of shocks or the intensity that is required to kill a fetus rendered it an inaccurate means of treatment; and then the question of the subsequent disposition of the fetus must also be considered, absorption and disappearance not following as necessary consequences, nor yet the formation of lithopædion; and if to these uncertainties be added an anæmic and enfeebled condition of the patient, the dangers of septicæmia were by no means remote.

A factor which must not be forgotten in these cases, too, was the influence which the consciousness of such a condition had upon the mind of the patient. To permit her to remain in the agony of fear from an impending calamity, or in the condition of uncertainty which follows an incomplete operation, did not seem to be offering her the highest resources of the physician's art. The other alternative, the performance of laparotomy, was the one which had received the support of German gynæcologists, and with it they had been eminently successful. Dr. A. Martin, of Berlin, reported, at the meeting of the American Gynæcological Society in New York, Sept. 15, that he had operated in 16 cases of extra-uterine pregnancy with only one death, the patient who died being *in extremis* at the time of operation. White of Buffalo, Lusk, and Janvrin were quoted among recent writers as favoring laparotomy as soon as the diagnosis of extra-uterine pregnancy could be clearly made out. Such a plan was believed by the reader to be quite as humane as anything that had as yet been proposed, and in view of the results which had thus far been attained could be considered perfectly legitimate, and even conservative, when compared with the great risks which attended the policy of simple non-interference.

The discussion was opened by Dr. C. C. Lee, who believed that the question of extra-uterine foetation was as important as any that could occupy the attention of the physician. He was a firm believer in the plan of treatment which had been recommended by Dr. Thomas; that is, electricity during the first 4 months of foetal life. The question of safety was, however, the one which made this method most available, — uncertainty as to the volume required in any given case, and also as to the subsequent disposition of the foetus, being admitted. The speaker thought that laparotomy might be the method of the future, but for the present he believed that the most favorable results would come from the safer and more conservative plan.

Dr. H. Marion-Sims agreed with the preceding speaker in his preference for electricity, if an abdominal pregnancy is discovered before the fourth month. He would only use the current tentatively, however, and be prepared to perform laparotomy if the results of electricity were not satisfactory. A case of tubal pregnancy was narrated, in which the patient had previously been sterile, the diagnosis being made in the third month. The foetus was killed by a succession of shocks from a powerful galvanic battery, the treatment being kept up, at short intervals, for a period of three weeks, and the intensity of the current being gradually diminished. In this case the result had been perfectly satisfactory, and at the end of two years scarcely any trace of the original tumor was discoverable. If

electricity were to be used, he believed, on the authority of Apostoli, that the galvanic current would be the more efficient. Apostoli had told the speaker that he had frequently had occasion to apply the Faradic current to the pregnant uterus, and that miscarriage had never followed. On the other hand, he had, in several instances, used the galvanic current, in ignorance of the fact that the patient was pregnant, miscarriage following.

Dr. Garrigues believed that extra-uterine pregnancies were much more common than is usually supposed. In studying this subject he had found a record of over 200 cases within a period of 4 years, and there was scarcely a month in which one or more cases was not reported in the current literature, at home or abroad. Contrary to the opinion of some writers, he believed that, in thin persons, the diagnosis of extra-uterine pregnancy, even at a very early period, was not difficult. The ordinary symptoms of pregnancy would be of much value in establishing the diagnosis of such a condition, and he relied especially upon the changes which took place upon the mammary areolæ. The passage of a true decidual membrane could not be depended upon; often there were only shreds of ordinary mucous membrane. Neither should enlargement of the uterus be expected in such cases earlier than the third month.

As to treatment, he was entirely in favor of electricity for even a longer period than the fourth month. He would use it even as late as the sixth month. If the pregnancy had continued until the child was viable, he would suggest the propriety of elytrotomy as a means of delivery, which would be found effective in some cases. He admitted the desirability of investigations to clear away the uncertainty which now existed as to dosage in the use of electricity as a fœticide. As to the propriety of destroying the life of the fœtus, he thought that question should have no weight at all when the possible grave consequences of its development were considered.

Dr. Wylie expressed his preference for laparotomy in almost any case in which extra-uterine pregnancy was discovered. He narrated the history of three cases in which he had operated for this condition, though he had doubted the diagnosis in the last case, believing that the patient was septicæmic from pyosalpinx. Laparotomy was performed, and his opinion verified. He thought that mistakes were frequently made in using electricity for supposed extra-uterine pregnancy, and that the result might be the excitement of suppurative inflammation and septicæmia. Even if the fœtus were killed, he thought the patient was being exposed to great risk of septicæmia by leaving the mass within the body. Dr. Janvrin believed that hæmorrhage might occur after the use of electricity, and therefore that the method could not be considered entirely safe. He briefly narrated

the history of his last case of tubal pregnancy, which was published *in extenso* in Vol. XI. of the "Transactions of the American Gynæcological Society," in which the galvanic current was used on three occasions, but on the day following the last application the patient died from hæmorrhage. This case had led to the conviction with him that, while electricity might be useful in the early months of pregnancy, it was not so effective a means of procedure as laparotomy. He regarded the latter operation as one which was certainly quite as justifiable for tubal pregnancy as for pyosalpinx, and certain other tubal diseases in which its appropriateness was unquestioned.

Dr. Partridge mentioned several points for differentiation of the diagnosis between tubal and abdominal pregnancy, admitting that the latter was usually very difficult, and often impossible. Frequently it did not give rise to characteristic symptoms, which were almost always present with tubal pregnancy.

Dr. Murray thought the discussion had not included the most important question which was raised in the paper, namely, the treatment in abdominal pregnancy. Almost any one would admit the value of electricity in tubal pregnancy, but its use in abdominal pregnancy was quite another matter. The conditions were different, the diagnosis was more difficult, and it became a very puzzling question whether one should keep hands off entirely, should perform laparotomy at an early stage, or should wait until the completion of gestation. Cases of this kind, which had been allowed to progress until the fœtus was viable before operative means were resorted to, had not, thus far, been followed by very good results, which argued in favor of early operations.

Dr. Currier, in concluding, said that he had not been convinced by any of the remarks that electricity was a safe, accurate, and uniformly effective means of treatment: in fact, this was admitted by all who had discussed the question of treatment. With the perfection of *technique* which had now been reached in laparotomy, and all the advantages of antisepsis and careful after-treatment, he could not see why there should be so much hesitancy in adopting such a plan of treatment, especially since the abdomen was now opened, every day, for conditions which were fraught with consequences far less grave than those which accompanied extra-uterine pregnancy. An important point, in the speaker's opinion, which had been overlooked in the discussion, was the effect which must be produced upon the mind of almost any woman by the consciousness that she was the subject of extra-uterine pregnancy. To relieve her of this by sufficiently radical measures should be the object of treatment.

A CONTRIBUTION ON THE SUPRA-VAGINAL REMOVAL OF THE BODY OF THE UTERUS.¹

BY DR. A. MARTIN, DOCENT IN THE UNIVERSITY OF BERLIN.

IN the intra-peritoneal establishment of a stump after supra-vaginal amputation the union of the borders of the wound are so planned, as a rule, that the wound is drawn transversely over the stump. This method is undoubtedly the simplest for the removal of large tumors, and especially in the possibility of raising the stump out of the pelvis into the abdominal wound and sewing it, while an India-rubber tube constricts it firmly and shuts off the blood. In 97 supra-vaginal amputations for myoma I have formed the stump in this way. Twice it has seemed to me advisable to form the suture in the sagittal direction. Both cases were for the removal of malignant new formation in the fundus, the fundus itself being of only small dimensions, and the cervix being immovably bound down in the pelvis by old adhesions. In both cases the bladder was inserted so high on the anterior wall of the uterus, that this had to be first dissected away in great extent before the fundus uteri was sufficiently freed to allow the complete removal of the site of the carcinoma with the fundus. Now, if I had made the suture transversely, I would have had to sew the bladder over the stump, which would have been critical, both as regards the quenching of bleeding in the stump and in respect to the function of the bladder.

Both cases appear to me to be of sufficient importance to serve as examples of the method in analogous difficult cases.

CASE I. Miss Schr. *æ.* 45, had menstruated regularly till January, 1885. Since then the flow has been irregular, often suspended, and at times very profuse. From the end of January, 1887, there was continuous flow, and with it considerable pain in the loins. The patient lost flesh and appetite, and failed very perceptibly.

Examination showed that an uneven mass, which filled up the pelvis, and lay above the narrow vagina which was characteristic of a virgin. Under anaesthesia it was established that the mass was outside of the uterus, and that near and above this small virginal fundus both tubes and ovaries, which were diseased, of the size of the fist, lay firmly adherent to their surroundings. The uterine mucous membrane, as removed with the curette, was recognized by the microscope to be carcinomatous.

The narrowness of the vagina and the contents of the pelvis being increased in size in all directions, would have made removal through the vagina extraordinarily difficult. On this account laparotomy was decided upon in order to remove the fundus of the uterus and the diseased adnexa.

¹ Translated from reprint from Wiener Med. Presse, furnished by the author.

Operation, March 30, 1887. Without special difficulty the sacs, which on each side consisted of cystic tubes united to each other, and the ovaries with their cystic follicles, were removed, having been dissected out of the degenerated mass and freed from the broad ligaments. The uterus was almost immovable on account of the tension of the pelvic floor. Anteriorly the bladder was adherent clear to the fundus.

In order to extricate the fundus under these aggravating circumstances both broad ligaments were next seized with bullet forceps. Then the

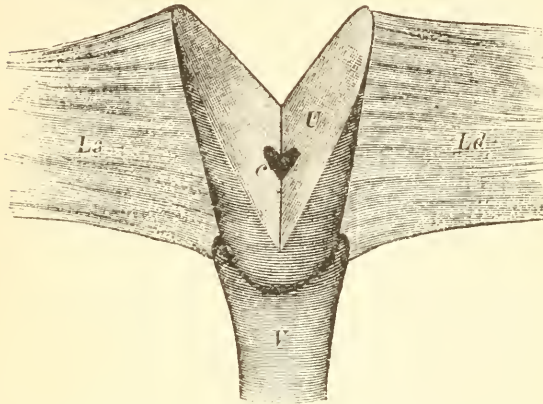


Fig. 1.

U = Stump of uterus seen from behind; C = Cervical canal; Ld = Right ligament; Ls = Left ligament; V = Vagina.

peritoneum was cut transversely about one centimetre below the fundus and near the insertion of the bladder, and was cut away by degrees over the bladder up to the cervix. An extensive detachment proved impracticable on account of the delicateness of the issues. The loosened bladder did not bleed. The body of the uterus, thus freed anteriorly, was separated from the broad ligaments, the stumps of which, together with those of the round ligaments, were secured with bullet forceps to prevent hæmorrhage. Right below the internal os the uterus was removed in a sagittal wedge. (Fig. 1.)

The cervical canal, opened transversely at the apex of this wedge, was disinfected with corrosive sublimate (1:1000 solution); its border was cut out and it was closed with a silk thread, which was carried through around under the edges. The surfaces of the wedge were united with several rows of silk sutures each in its proper place to bring together corresponding parts, as shown by similar appearances (Fig. 2). The stumps of the broad ligament (L L) were united with catgut preserved in juniper oil,

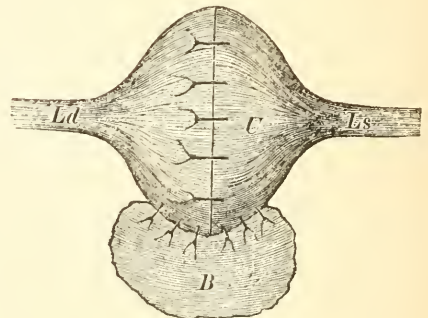


Fig. 3.

U = Uterine stump; Ld = Right ligament; Ls = Left ligament; B = Bladder.

so that a sagittal suture extended from Douglas' *cul-de-sac* up to the tip of the stump (Fig. 3). Then, from anteriorly, the bladder was sewed into the slit of the ligaments with catgut sutures. After boring through Douglas' *cul-de-sac* into the vagina and introducing a rubber drainage,

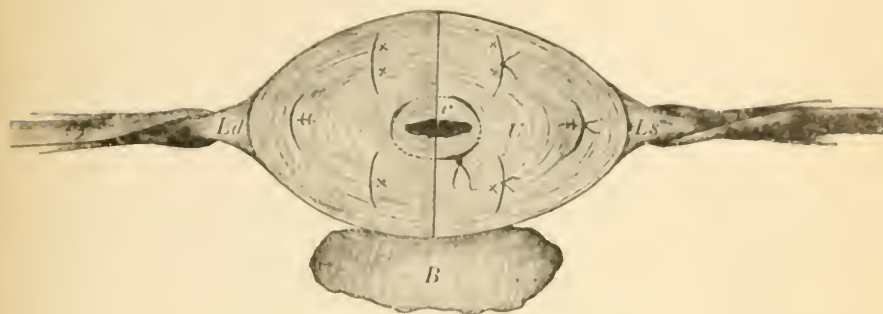


Fig. 2.

U = Uterine stump; C = Cervical canal; Ld = Right ligament; Ls = Left ligament; B = Bladder.

tube, the operation was completed. The duration of the operation was fifty minutes.

The intestines, which at the beginning of the operation had been pressed into the upper part of the abdomen and held back by a large sponge, had finally, however, to be taken out in order that the sewing could be done in the depths of the pelvis; and until this was finished they were kept covered by a moist, warm towel.

The patient was catheterized only once during the convalescence; at other times the urine was evacuated spontaneously and without pain. The convalescence progressed almost entirely smoothly; the abdominal wound healed by first intention. Some secretion appeared in a sinus, but it continued only four days. The drainage tube was removed on the eighth day. After getting up, a mark appeared on the calf, which came from a former rupture of the muscles, and this lasted several days. The patient was discharged on the thirtieth day, and since then has remained very well. At times there appear trifling symptoms of a hastened climacteric. The functions of the bladder were normally performed.

Macroscopic Appearance. (Orthmann.) — The body of the uterus excised as a sagittal wedge had a length of 4 centimetres, a breadth of 3 centimetres, and a thickness of 3.5 centimetres.

The uterine cavity, seen in a longitudinal section, has a length of 3 centimetres, and the walls a thickness of 1 to 1.5 centimetres. The normal mucous membrane can be no longer recognized in the fundus.

Instead of this, especially on the anterior wall, there are still isolated, soft, crumbly masses, which manipulation easily breaks loose. The posterior wall is quite smooth in places (in consequence of a curetting made some days previously for testing). The adnexa on both sides are very much changed; the tubes and ovaries are closely grown together. The ovaries on both sides have changed into thin walled cysts, from the size of hen's eggs to that of apples, which communicate with the tubes by an opening from 0.3 to 0.5 centimetres in diameter. The abdominal extremities of the tubes are enlarged in a cystic manner, while the uterine ends are without special change.

Microscopic Appearance. — The masses removed from the uterus by the curette, some days previously, showed a carcinomatous degeneration; and in like manner the remaining portions of the uterine mucous membrane showed a carcinomatous degeneration. Pieces of the mucous membrane removed from the cervical canal presented normal appearances, so that the operation has reached entirely into healthy tissues.

Anatomical Diagnosis. — Carcinoma of the body of the uterus; multiple tubo-ovarian cysts.

CASE II. — Mrs. H., *ae.* 43, was twice delivered (twenty-three and eighteen years ago), the last time at the sixth month. For a year there had been very abundant flowing, repeated every two or three weeks, with extremely fetid secretion in the intervals.

In this extremely anæmic and prematurely aged woman, on the 12th of June, 1887, the fundus uteri was felt to be the size of the fist, and hard and knobbed, and near by the left half of the pelvis was filled with a large tumor the size of the fist.

This tumor was considered tubo-ovarian, on account of the tubes being easily felt in their passage from the uterus into this mass, in the under part of which the portion corresponding to the enlarged ovary still lies. The adnexa on the right side have likewise enlarged. The whole mass has grown so firmly together and to the pelvic walls, it appears immovable.

The introduction of the sound into the uterus shows that the uterine cavity is filled with a tumor, which apparently grows from the anterior wall. A portion removed by the curette is shown to be a malignantly degenerated myoma.

In this case also a vaginal operation could not be thought of, for the freeing of the mass from the pelvic walls appears to be a very difficult operation, and nothing anywhere near satisfactory could be expected except removal from above.

Immediately after the patient had recovered from the anæsthesia and

curetting, the menses appeared. During this time much pain was suffered, yet there was nothing abnormal observed about the temperature or pulse. The patient recovered, with proper nursing in the hospital.

June 25, 1887, laparotomy proved that the patient had a general, fresh, fibrinous peritonitis, by which the intestines were bound together and to the walls of the abdomen in an extraordinary manner. The peritoneum was intensely congested with vessels greatly filled. The adhesions of the intestines were partly much flattened, and partly stretched out in strings which bound together and to the mesentery pieces of intestine of the thickness of the thumb, and thread-like. Tediously the coils of intestine were sufficiently separated, and the bands and threads sufficiently loosened so that finally the contents of the pelvis lay free.

The whole mass was very difficult of differentiation. Finally the uterus was separated, and from it the tumor on the left side was differentiated and freed from the bottom of Douglas' *cul-de-sac*. The mass cracked and emptied bloody, pus-like fluid contents. The cyst walls were raised up with the thickened tubes (see the anatomical report below), separated from the broad ligaments, and removed. The adnexa on the right side, which were less voluminous, were freed and removed in a similar manner.

The uterus could not be lifted up. It appeared to have grown fast to the walls of the pelvis, and the bladder came up high on the anterior surface of the fundus. The stump of the broad and round ligaments were caught in bullet forceps; then, above the insertion of the bladder, the peritoneum was cut transversely, and, step by step, the bladder dissected downward from the cervix.

Then followed separation of the broad ligaments. Excision of the fundus uteri as a sagittal-shaped wedge from the cervix. Excision of the cervical canal visible here in the edge of the wedge. Disinfection. Union with silk sutures. Sewing of the surfaces of the wedge spirally with catgut sutures preserved in juniper oil. Union of the stump of the ligaments to the stump of the cervix, the line being in the sagittal direction. Junction of the bladder to the anterior end of this line of union which here runs out two-cornered. Drainage of Douglas' *cul-de-sac* into the vagina. Closure of the abdominal wound. Duration of the operation, fifty minutes.

During this time the intestines had been shoved up into the upper part of the abdomen, and, on account of the relative laxity of the abdominal walls, could be held back there by a large sponge.

The patient recovered quickly from the shock of the operation, completed with only a small loss of blood, without the appearance of peritonitis, and with no abnormal secretion through the drainage. Con-

valescence progressed almost without any reaction. The patient emptied her bowels spontaneously. Her recovery from the operation is really assured.

Macroscopic Appearance. (Orthmann.) — The extirpated corpus uteri is somewhat regularly rounded, and has a length of 8 centimetres, a breadth of 7 centimetres, and a thickness of 6.5 centimetres. On the outer surface of the uterus are seen the remains of numerous connective tissue adhesions and a marked injection of the vessels of the peritoneum covering it. On section there is seen growing from the anterior wall of the uterus a roundish tumor from 3 to 3.5 centimetres in diameter, which shoved the uterine cavity backwards and filled it up.

In the inside the tumor is partly covered with mucous membrane, while the muscular tissue over it has a thickness of 2 centimetres. The cut surface is of a yellowish-white color, and in places of a somewhat ragged, crumbly nature. The consistency is extremely soft. The uterine mucous membrane is somewhat atrophied on account of the compression.

The adnexa on the right side are changed in a high degree. They consist of the tubes very much thickened, and the ovary degenerated into an abscess the size of a hen's egg. The thickening of the tubes commences at the internal orifice itself, and at the most marked place attains a diameter of 1.5 to 2 centimetres. In the last third the lumen is somewhat increased, and contains a thick yellow pus. The abdominal extremity communicates with the ovarian abscess, the walls of which were torn in one place during extirpation. The inner surface is of a rough, uneven nature. Both the tubes and the ovaries are covered with numerous connective-tissue adhesions.

The adnexa on the left side are not changed to such a high degree. The tube is similarly thickened, *i.e.*, in the last two-thirds. The lumen contains a somewhat pus-like fluid. The abdominal extremity is partly closed, but is still pervious. The left ovary, bound down to the tube by connective-tissue bands, is much enlarged. On the under side there is an abscess cavity, of the size of a bean, which is already torn open in one place, and there is also another smaller but very similar, more in the middle.

Microscopical Appearance. — Sections from the superficial portions of the tumor, which appeared macroscopically to be of a softer consistency, show more or less circumscribed nodules of round cells, which can also be traced further into the tissue, while they separate the smooth muscular fibres and gradually cause them to disappear. Evidently there is here a commencing sarcomatous degeneration of the tumor. The deep parts consist of real myomatous tissue.

Anatomical Diagnosis. — Myo-sarcoma of the body of the uterus.

Purulent salpingitis on both sides. Abscesses of both ovaries. Perisalpingitis and perioöphoritis on both sides. Perimetritis.

Both cases show an expedient out of the difficulty met with in the removal of the body of the uterus, when the uterus is bound fast to the pelvic walls and the bladder is adherent so high up on the anterior wall that the cervix is inaccessible.

For sewing the stump and the peritoneal wall I have almost always used catgut prepared with juniper oil. For the closure of the cervical canal only, have I used silk. Undoubtedly the prognosis for the removal of the uterus is improved with the possibility of avoiding a great mass of silk threads, and sloughing is less marked on this account. For some months I have used catgut preserved in juniper oil considerably, in forming the stump after myotomies, and after seven such cases I have every reason to be pleased with it.

The experience which I had with silk threads during the after-treatment of supravaginal amputations forced me to this conclusion while observing the first convalescence. In nine cases already during this further progress it has happened, so far as I have observed, that out of the stump of the cervix there appeared a secretion rich in pus-cells and bloody, which smelt horribly and chafed the external genitals. Threads then lay in the cervical canal, and also came away spontaneously. While examining the canal during anaesthesia with small bullet forceps, not only could single threads be pulled out by using considerable force, but also great masses of threads and such silk threads belonging to the continuous sutures. Several loops could be cut with the scissors in the tissue, but others came away untied without using any force; therefore there was in consequence only a small amount of bleeding. I had these patients immediately put to bed and ice applied. *They all remained free from any relapse*, although threads had undoubtedly been drawn from the surface of the stump through the furrows which they had made, having often cut through. None of these patients ever had any trouble afterwards.

These complications in the healing of the stump after intra-peritoneal formation of the pedicle can be avoided by using catgut. I am positively assured that this method of intra-peritoneal formation of the pedicle will win for itself more and more advocates. It is the ideal method, as its opponents themselves acknowledge. The more we use it the better will we be able to overcome the difficulties and dangers just now connected with it. I take the stand that the use of a properly prepared catgut will essentially contribute to the improvement of the prognosis, not only during the convalescence from the operation itself, but also for the establishment of the later shrinkage of the stump of the cervix.

CZEMPIN. — THE ENUCLEATION OF INTRA-PARIETAL MYOMATA ACCORDING TO MARTIN'S METHOD. —
Ztsch. f. Geb. u. Gyn. Bd. xiv. II. 1.

THE location and manner of development of uterine myomata have a decided bearing upon the proper operative procedures for their removal. In the majority of cases removal of the neoplasm necessitates simultaneous supra-vaginal amputation of the uterus. With the use of the elastic ligature, the improved method of stitching the stump, and the intra-peritoneal treatment of the same, great advance has been made in operative measures. Still the operation is difficult and dangerous, and requires the removal of the most important sexual organs.

The removal of sub-mucous myomata by laparotomy and incision of the uterus, with successive closure of the wound made by removal of the tumor from its bed, of the uterus, and of the abdomen, and without the removal of important organs, constitutes another important step in the line of progress. The operation was first performed by A. Martin in 1880, for the removal of a sub-mucous myoma which could not be extracted through the vagina. Its success led to others for tumors attached to the anterior or posterior walls, or at the fundus, and since 1880 Martin has operated upon 16 cases by this method. It has also been used by Schröder, Mörücke, and Gusserow. The operation is not indicated for multiple myomata, but for those cases in which there is but one large tumor. Martin does not remove the ovaries in such cases unless they are diseased, but he sometimes finds it necessary to amputate the uterus. If the technical difficulties for the performance of the latter operation were too great to be overcome in a given case, Olshausen advises partial myomotomy and removal of the ovaries.

The elastic ligature is used whenever it is practicable; but several of Martin's operations were performed without its use, with no serious inconvenience. In removing the tumor from its bed the uterine canal may be opened, but this does not seem to be a matter of significance. In most of the cases the wound in the uterus was closed by sutures which passed entirely through the organ, into the canal, and then through the organ again in the reverse direction. Buried sutures were used in cases in which the wound was too deep for such as were just referred to. Drainage was seldom required, especially if buried sutures were used; in one case, however, the wound was drained through the uterine canal and the vagina, and in another, through Douglas' cul-de-sac and the vagina.

Of Martin's 16 cases 3 were fatal, and all occurred before the *technique* of the operation was perfected, from primary septic infection. In the first 5 operations the duration was from one and a quarter to one and a half hours; in the remaining 11, from half to three-quarters of an hour, all of the latter ending in recovery. In most of the cases convalescence was speedy and uninterrupted. An interesting fact was that in those cases in which the patients were between 40 and 50 years of age, the menopause resulted from the operation. In the younger women menstruation resumed its normal course.

DOHM. — ON THE TIME WHICH SHOULD ELAPSE BETWEEN THE OPERATIONS OF VERSION AND EXTRACTION. — *Ztsch. für. Geb. u. Gyn. Bd. XIV., H. 1.*

It is a well-known fact that with most obstetricians the operation of turning is followed immediately by extraction, notwithstanding the fact that such a course is opposed to theoretical considerations and to customary teaching. The consideration of this question is limited to operations following transverse presentations. The question has been recently brought up for discussion by Winter, in a paper in which he gave the histories of 310 cases of transverse presentation, taken from the records of the maternity of the Berlin University. His propositions with reference to this subject are, (1) one should never perform version until the *os* is sufficiently dilated to admit of extraction; (2) the best results are attainable for the child by extracting immediately after turning.

The author's experience leads him to accept the first proposition without reserve, the second is not recognized as entirely sound.

The manifest advantage of turning, after the *os* is sufficiently dilated for that purpose, the waters having drained away, is found in the fact that a continuance of a faulty presentation, like the transverse, after the waters have been lost, threatens the child's life by interference with the placental circulation. This is a sufficient cause for apprehension without considering the possibility of *tetanus uteri*, and compression upon the umbilical cord. There are exceptional cases, it is true, in which several days may elapse between the discharge of the waters and the birth of the child, the child being born alive; but the author thinks that in all such cases the waters have not drained away from above the child, and that the placental surface, and consequently the circulation, is still protected. The fear of rupture of the uterus sometimes induces one to perform version prema-

turedly ; but it must be remembered that this is a rare accident, and usually happens after the *os* is fully dilated.

In regard to Winter's second proposition, he reports 236 cases of version after the *os* was sufficiently dilated, which were immediately followed by extraction, and in only 5 cases was there a fatal result. There were also 27 cases in which turning was performed before the *os* was well dilated, the cases being then left to nature, and in 13 of these the children were still-born. The author is quite unwilling to accept this statement as conclusive of the disadvantage of waiting for spontaneous birth after turning has been performed. He holds it as a first principle that nature's processes should not be interfered with as long as there is a probability that they will be efficient. He also thinks it probable that the 27 cases of Winter, of which 13 were fatal, would have resulted differently had turning not been performed until the *os* was well dilated. The results of operations of this character depend very much upon the manual dexterity of the operator, and the degree of his knowledge respecting the processes at work in connection with the mechanism of labor. This enables us to understand why, in a recent report concerning obstetrical operations in the grand duchy of Nassau, there should be so high a mortality as 57 per cent. after the operation of turning, and also why, in Winter's statistics, there should be a mortality of only 2 per cent. from the same cause. In the first case the results were those of the general practitioner, good and bad ; in the second, they were exclusively those of the trained and skilful hospital obstetrician. In the author's clinic at Königsberg 152 cases of transverse presentation were recorded during his and his predecessor's service. Turning was performed after the *os* was sufficiently dilated, and extraction followed after a sufficient interval. The mortality in these cases was 14 per cent. In 29 other cases there was no indication for further interference after turning had been performed, and they were consequently left to nature. All of the children were born alive in a quarter of an hour to an hour and a quarter, and none of the mothers suffered mishap. The author's position is, therefore, as follows : —

- (1) With a transverse presentation one should perform podalic version only after the *os* is fully dilated, exceptional cases being excluded.

- (2) The fœtus should be extracted only when a particular indication for that operation exists. In the absence of the latter it will be for the interest of both mother and child to leave the case to nature.

EXTRA-UTERINE PREGNANCY AND ITS TREATMENT BY ELECTRICITY.

Abstract of Paper read before the American Gynecological Society, Sept., 1887.

BY DR. ELY VAN DE WARKER, OF SYRACUSE.

THE following case was reported: Mrs. X., aged 27 years, was married at the age of 24. In 1885 she had an abortion at three months. July 25 she had her last menstruation, and August 28 she was taken with severe pain beginning in the pelvis and extending over the abdomen. There was slight collapse, which disappeared under the use of morphia. The next day what was taken for menstruation came on. The attacks of pain continued to recur, and on September 17 the decidua was passed. On examination a small tumor was detected to the right side of the uterus, and slightly posterior to it. This was about three inches long, and one and a half inches in diameter. Extra-uterine pregnancy was diagnosed. Severe paroxysms of pain continued to recur, and on October 6 the electrical treatment was commenced. This consisted in the use of the faradaic current, a strong induction coil being used. The patient was given ten treatments of half an hour's duration, one electrode being pressed against the tumor in the vagina, and the other applied externally. At the end of this time there was no apparent change in the pelvic mass, and the pain continued. On October 20 the treatment was continued one hour, and this was repeated on the following days until three applications were made. After the first of these applications the tension of the cyst was found to be less. This was regarded as a sign that the fetus was destroyed, and was believed to be a sign easier of recognition than a diminution in the size of the tumor. The paroxysmal pain also ceased as soon as the tension diminished. In using electricity for this purpose the application should be repeated until the subjective and other evidences of pregnancy disappear. In this case the patient recovered completely, but it was seven months before all traces of the tumor had disappeared.

DISCUSSION.

Dr. JOHN C. REEVE, of Dayton, Ohio: I have reported one case of extra-uterine pregnancy cured by electricity. Twenty years ago it was pointed out that sudden and violent attacks of pelvic pain, attended with gushes of hemorrhage, almost certainly indicated extra-uterine pregnancy. We have since learned that the expulsion of a deciduous membrane is pathognomonic. In the diagnosis of this condition the first thing to do is to determine the probable existence of pregnancy.

An important point in diagnosis is that the tumor in the pelvis manifests signs of activity in its circulation, and it grows rapidly. In my case some six or eight applications were made, the current being as strong as the woman could bear. The first sign of its effect was the diminution in the activity of the circulation of the cyst. In my case it was months before all signs of the tumor disappeared.

Dr. F. MARION SIMS, of New York: In a case under my care, four years ago, treatment by electric shock was resorted to. The patient was anæsthetized, and twenty or thirty shocks, from fifteen freshly charged cells, were passed through the foetal mass. Eight or ten applications of this kind were given at intervals of two or three days. At the end of this time there was noticed a decided lessening in the tension of the sac. The use of electricity was then stopped. At the end of one year there was still some thickening of the cellular tissue. The patient's health has been perfect since the operation.

Dr. JAMES R. CHADWICK, of Boston: One year ago I had a case of extra-uterine pregnancy which I treated with the constant current constantly interrupted. This was continued three or four weeks, before the symptoms ceased. Five weeks later the fœtus protruded into the vagina, and was removed.

Dr. MARTIN, of Berlin: I have operated on sixteen cases of extra-uterine pregnancy. The treatment by electricity has not met with much favor in Germany. Tubal pregnancy is the most common form of this accident, and this can be easily diagnosed, and easily operated on. I have operated on nine cases of tubal pregnancy, and all but one have recovered. In this case the tube had burst, and the abdomen was filled with blood before the operation was done. Death resulted from the great loss of blood. The treatment of the other forms of extra-uterine pregnancy will depend upon the symptoms and the course. In these cases the chief objection is the danger of hæmorrhage from the placenta, but I have experienced no difficulty in dealing with the placenta. •

Dr. MATTHEW D. MANN, of Buffalo: The electrical treatment of these cases has advantages over all other methods of treatment. The dangers connected with the use of electricity, where puncture is not made, are very slight. If this method fails we can still perform laparotomy.

Dr. APOSTOLI, of Paris: Where a case of extra-uterine pregnancy has been diagnosed in its earliest stages, the use of electricity should be tried before reverting to any operative procedure. The faradaic current is not to be depended on. I have accidentally used the faradaic current on the womb in cases of pregnancy, not knowing that the condition was present, and no abortion has resulted. On the other hand, I have accidentally used the galvanic current under these circumstances and abortion has been induced. I would recommend the introduction of one electrode into the sac, while the other is applied externally, and in this way, if a strong current is used, the death of the fœtus is assured at one sitting.

Dr. JANVRIN, of New York: Last year I reported a case of extra-uterine pregnancy, in which galvanism was employed. The patient died from bursting of the tube after the third application. I have become convinced that the condition of collapse and colicky pain, observed in cases of tubal pregnancy, is not due to dis-

tention of the sac, but to the rupture of small vessels in the peritoneal covering of the tube. The treatment of these cases is not galvanism; but as soon as we have made our diagnosis, we should, on the first evidence of shock and colicky pains, at once remove the tube by laparotomy, and thus give the woman a chance of being a well woman.

Dr. ELV VAN DE WARKER, of Syracuse: It has been shown that the use of electricity is not dangerous, and, if it fails, we can resort to laparotomy. If Dr. Janvrin's view is right, we should have hæmatocele; but, in my case, where there were repeated attacks of pain, there was no evidence of hæmorrhage. With reference to the recommendation of Dr. Apostoli, I think that the introduction of an electrode into the sac would be as dangerous as laparotomy.

THREE CASES OF TUBAL PREGNANCY.

From the Pathological Museum of Harvard University.

PLATE II. The uterus is seen cut open, with the tube and the corpus luteum. The woman was 27 years of age, and about ten weeks pregnant. Four or five weeks before death a discharge came on, supposed to be catamenial: this ceased after continuing for three weeks, but reappeared a day or two before death. Attacked in the morning with agonizing pain, she died in six hours, with the symptoms of internal hæmorrhage; the nature of the case having been recognized by Dr. Storer. On examination three pints of blood was found in the peritoneal cavity. The ovum was in the outer half of the right tube, one and one-half inches in length, and no part of it had escaped from the tube; the rent in this last being irregular and one-third of an inch in length. Uterus three and one-half inches in length, and without a trace of decidua. Corpus luteum in the right ovary and finely marked.

Reported by Dr. H. R. Storer, 1860. No. 2910.

For a collection, by Dr. G. H. Lyman, of eleven cases of tubal pregnancy that have occurred in this State, and mostly in this city, including the above, see "*Bost. Med. & Surg. Journal*," Vol. LXL, p. 464.

PLATE III. Uterus, decidua, corpus luteum, and fœtus connected by cord with the tube, are shown.

From a patient, aged 24, married two and a half years; miscarried twice, at six and eight weeks. Had always suffered from dysmenorrhœa. Ten weeks pregnant. Slight pains and uneasiness in pelvic region during that time. No previous hæmorrhage. Ten days before death had a very severe attack of pain in the pubic region, like strangury, which was relieved by an opiate. Fatal attack came on, with sudden diffused pain in hypogastric region, spasmodic in its character, with distressing rather

than painful intervals. The rapid collapse led to a correct diagnosis before death. Lived three and a half hours. Two quarts of blood in abdomen. Right fallopian tube dilated, from its uterine termination, outward, into a sac two inches in diameter, the sulcus separating it from uterus being strongly marked, though shallow. From sac to fimbriated extremity three and a half inches. Rent in upper anterior portion of sac, one and a half inches long. Fœtus, three inches in length, lay in pelvic cavity; length from vertex to umbilicus, two inches. Cord unbroken. Uterus much softened, length three and five-eighths inches; breadth at widest part, two and one-quarter inches. Vascularity increased; vascularity of sac very marked; decidua perfect. Fine corpus luteum in right ovary three-quarters of an inch in diameter. Cyst size of a pea, upon the left ovary, and, within, traces of an old corpus luteum.

Case reported by Dr. G. H. Lyman, as above.

TUBAL (INTERSTITIAL PREGNANCY) RUPTURE.

PLATE IV. Fig. 1. The specimen consists of the uterus and adnexa. In the right ovary is a corpus luteum about 1.5 cm. in its longest diameter, with rather a small puckered linear yellowish centre, with firm fibrous tissue surrounding it. At the right upper part of the fundus, just at the point where it was joined by the fallopian tube, was a tumor, the size of a hen's egg, which had opened on its external surface, and which was filled with a shreddy mass, recalling in appearance placental tissue. It was reported that a small embryonic-looking body had been found attached to this at the time of the autopsy. The internal membrane of the uterus was markedly thickened, but the organ itself was but little increased in size. From a woman 26 years old, who had been married three months. Menstruated regularly, the last period having ceased two days before death. Did not suspect pregnancy. Perfectly well until 11 A.M., March 25, 1886, when suddenly seized with faintness and pain in the abdomen: symptoms continued until 2 A.M., March 26, 1886 (*i.e.*, thirteen hours), when she died. A quantity of dark fluid blood in the abdominal cavity.

Reported by Dr. E. A. Kemp, Danvers, Mass. No. 1064.

PLATE IV. Fig. 2. From a specimen belonging to Dr. H. O. Marcy. Shows on one side the fimbriated extremity of the tube grasping the ovary, — *morsus diaboli*, — illustrating the mechanism of normal conception.

The other tube is held by adhesions. Such bands, by interfering with the functions of the tube, are supposed in certain cases to prevent the ovum from passing out into the uterus, thus becoming a possible source of tubal pregnancies.

HOSPITAL REPORTS.

SUPRA-VAGINAL HYSTERECTOMY. REPORTED BY F. L. BURT, M.D.,
HOUSE-SURGEON MURDOCK FREE HOSPITAL FOR WOMEN,
BOSTON, U.S.A.

Miss X, 36, entered the hospital on April 26, 1887. She was unwell first at 11½ years, the last appearance being April 18-20, inclusive. The menstruation has been regular as to time, generally of three days' duration, and of no excessive amount. During the past two years there has been a growth noticeable in the abdomen which has increased slowly and perceptibly, —less apparent, however, on account of a very thick layer of fat in the abdominal walls, —until at the present time it has reached a size nearly equal to the head. During most of this period there have been no symptoms of any importance, there being no excessive hæmorrhage at any time; and it is only recently that any symptoms have developed. She describes now what she calls uncomfortable feelings. There is some pain in the right groin, also bearing-down pains, felt mostly on standing, walking, or riding, especially on right side. There has been a leucorrhœal discharge during the last four months, considerable in amount and of late of very offensive odor. Examination shows a growth, of proportion above-mentioned, which is in general smooth, but of a lobulated feeling, because of there being more than one mass. It is in the median line, is in the uterus, or is the uterus itself increased in size, and the diagnosis is made of fibroid tumors. Operation was advised, as the tumor was growing rapidly and already prevented the patient from working. She was kept in the hospital for two weeks. May 11 hysterectomy was performed. The patient was prepared as thoroughly as possible to destroy all sources of sepsis, details of which need not be entered into here. The incision, — in the median line, — at first short, had to be extended until it reached a little above the umbilicus and down nearly to the symphysis, the length being about six inches. It was found that the bladder extended up unusually high, apparently somewhat adherent, and by accident it was opened, and the wound was repaired with two lines of continuous catgut suture. The mass was then seized with corkscrews on either side, the hand having been passed around to free the adhesion, and the tumor was pulled outside the cavity. Besides the larger growth there were two others, each of the size of a man's fist. A rubber dam was placed around the whole, and a rubber tube twisted around its base to

control hæmorrhage. A suture, a No. 5 catgut, was passed through the stump with the shoemaker stitch, it being well tightened to control the circulation. This was at a point one inch above the cervix. After shelling out the tumor just above this suture the uterine cavity was touched with a strong solution of sublimate glycerine, 5i to ʒi. The redundant edges of the sac were then trimmed away and brought together, and the stump was finished with two lines of continuous catgut suture, one in the muscular tissue and one in the peritoneal covering. The few bleeding-points were twisted or ligatured with catgut, the abdominal cavity was irrigated with a hot $\frac{1}{5000}$ sublimate solution, and then with hot water, and the stump was dropped back into the cavity. There was no opening left for drainage. The surfaces of the peritonæum were approximated and united with a fine, continuous catgut suture, and the muscles and skin were closed separately with a No. 5 of the same, and dressing applied.

The hæmorrhage was large in amount, the shock very considerable, and outlook uncertain; but patient rallied well, having been well stimulated, brandy given freely subcutaneously and by enemata. The bladder was expected to be a source of trouble, but none appeared, since it was catheterized frequently to prevent its becoming over-distended; also, care was taken not to set up cystitis. After two days a short, double-curved, metal catheter was placed permanently. Two weeks later, after the catheter had been removed, slight cystitis was developed, but was entirely relieved by sublimate injections, $\frac{1}{20000}$ or $\frac{1}{10000}$. On the third and fourth days after operation abdomen was found to be quite distended, apparently with gas. The tissues became pretty thoroughly stretched, and it was very uncomfortable to the patient. Rochelle powders were given, and a rectal tube was introduced, and some liquid feces and air passed; but there was no diminution in the size of the abdomen. Later it was reduced, the bowels having been well moved. While unable to take nourishment by the mouth, Murdock liquid food in enemata proved very valuable, sustaining her until the stomach was able to act. The forenoon of the seventh day the patient was feeling very comfortable, but the temperature was recorded at 105°, the reason unknown. In the afternoon it had fallen to 102°, and in the evening 100°, and there were no more elevations. Up to this time the line of incision was thought to have healed by first intention entirely, but, as it was found that pus came from the lower angle of the wound, the sutures were cut and removed, and, subsequently, pus came from most of the lower half of the wound. This was irrigated with sublimate, later drawn together with plasters, and finally healed entirely.

The very considerable and offensive discharge from the vagina was conquered by vaginal sublimate irrigations; and the irritability of the blad-

der, from pus in the urine, was entirely relieved by weak injections of the same. One of the very interesting points in the case presented itself after convalescence. We usually do not have an opportunity to examine the suture placed in the stump, but in this case, during the time from June 20th to July 10th, there was a passage, almost daily, of pieces of the large gut suture used. There was no piece seen over two inches in length, and each was partly absorbed. Most of it was lost, as it was not considered of sufficient importance to preserve, and part passed away at stool. From accounts given, there must have been fully as much passed off as was used in the operation. In this number of the *ANNALS*, Dr. Martin reports similar passage of silk sutures used in ligating the stump. The weight of the whole tumor is five and one-half pounds.

PUBLISHERS' NOTICE.

WITH this number of the *ANNALS* we publish the Table of Contents, and in the February number will appear the List of over 200 Illustrations of the valuable work, "Pathology and Therapeutics of the Diseases of Women," by Dr. Martin, of Berlin, in order that our subscribers may know more of its scope and nature. It is a book which should be in the hands of every practitioner, and we hope for a general support in our endeavor to place it before the profession at the extremely low rate at which it is offered. We will send to any subscriber to the *ANNALS* who requests it, for four months, sample copies of the supplement, containing each 24 pages of the translation of Dr. Martin's book. There will be no charge for these sample copies to any one who at the end of the four months decides not to continue to take the supplement, and so informs us. It will be so bound that each number can easily be detached from the *ANNALS*, and, being paged consecutively, it will eventually form a complete work, which can be bound up by itself. The distinguished author will make such additions and changes in the statistics, etc., as may seem to him advisable during the progress of the translation. With this number of the *ANNALS OF GYNECOLOGY* we send a bill for one dollar, and beg that physicians receiving it will promptly favor us with a remittance, in case they care to receive the subsequent numbers.

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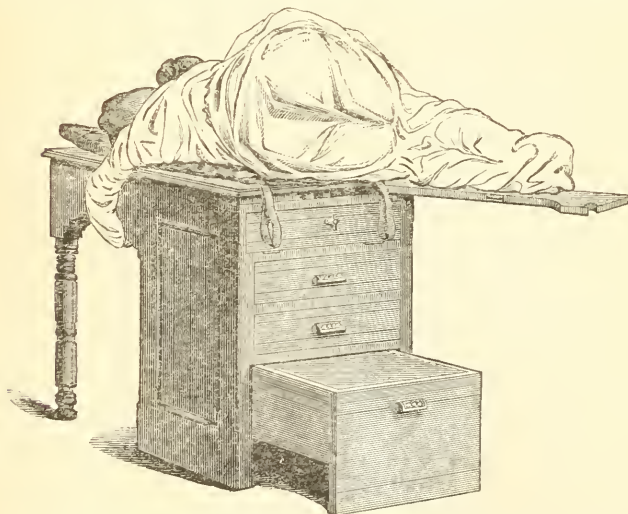
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PATHOLOGY AND THERAPEUTICS

OF THE

DISEASES OF WOMEN.

FROM

LECTURES GIVEN TO PHYSICIANS DURING THE
VACATION COURSES

BY

DR. AUGUST MARTIN,

INSTRUCTOR IN GYNECOLOGY IN THE UNIVERSITY OF BERLIN.

With 210 Woodcuts.

TRANSLATED FROM THE SECOND REVISED AND ENLARGED EDITION, WITH THE
APPROVAL OF THE AUTHOR, FOR THE "ANNALS OF GYNECOLOGY."
WITH NOTES BY DR. F. W. CUSHING.

BOSTON :

ROCKWELL AND CHURCHILL,

1888.

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PREFACE.

THE publication of this book, on the "Pathology and Therapeutics of the Diseases of Women," was suggested to me by the oft-repeated wishes of those fellow-physicians who attended my vacation courses in Gynæcology. In addition to the excellent text-books and hand-books which give such brilliant distinction to German Gynæcological literature, they wished to have a clinical representation of Gynæcology which, in the most concise form, should give to the practising physician the most necessary points in diagnosis and therapeutics, without neglecting pathological anatomy, and at the same time avoiding the possibility of losing themselves in the confusion of controversies over questions yet under discussion. With this point in view, I took pains, during the holiday courses, to give, with all possible brevity, to the physicians in attendance a survey of our specialty, utilizing the abundant clinical material at our disposition. In accordance with the above-expressed wishes, these lectures were taken down by a stenographer, and from them this book was compiled.

Such being the origin of this work, I am justified in keeping aloof from any elaborate discussion of the literature (desirable as it would have been to undertake it), as well as from any comparison of the different therapeutic methods, however important. For the same reason I am also justified in omitting the abundant clinical histories which would have served for illustrations of the lectures.

In elucidating the lectures by graphic illustrations, my long-tried friend, *Carl Ruge*, has been of great service. I am indebted to him for the production of many fine drawings, which he prepared from my material. Dr. *Düvelius*, also, has aided in the most obliging manner in the preparation of these specimens, and in revising the proof-sheets. Dr. *Hauchecorne* also placed himself at my disposal in the preparation of the diagrammatic drawings. To all of them I now extend my hearty thanks.

I have borrowed a number of instructive illustrations from *Schröder's* hand-book.

A. MARTIN.

PREFACE TO THE SECOND EDITION.

THE completion of the revision of my book has been delayed by many detentions much beyond the limit desired by the publishers. May this new edition in its present form meet the approval of its readers!

For active assistance in preparing this edition, most of all must I thank Dr. *Orthmann*. He took special charge of the illustrations, and as far as possible prepared new drawings from new specimens. In addition I must also thank the following gentlemen, Drs. *Czempin*, *Langcr*, and *Nagel*, for the assistance which they were always ready to render me in the correction of proof and in the collection of material for statistics.

I am gratified to see that my book has gained recognition outside of the domain of the German language. It has been already translated into Russian and Spanish, and now other translations are in preparation.

A. MARTIN.

BERLIN, Feb. 22, 1887.

TABLE OF CONTENTS.

PREFACE	
TABLE OF CONTENTS	
LIST OF ILLUSTRATIONS	
I. — PHYSICAL EXAMINATION OF THE PATIENT	
<i>A.</i> Situation of the pelvic organs	
<i>B.</i> Methods for the physical examination of the patient	
1. Palpation. Combined examination	
2. Inspection. Speculum	
3. Significance of the neighboring organs during the examination	
4. Examination during anæsthesia	
5. Examination with the sound	
6. Examination of the interior of the uterus	
II. — PHYSIOLOGY AND PATHOLOGY OF MENSTRUATION AND CONCEPTION	
1. Menstruation	
2. Derangements of menstruation	
<i>a.</i> Amenorrhœa	
<i>b.</i> Menorrhagia	
<i>c.</i> Dysmenorrhœa	
<i>d.</i> Conception	
<i>e.</i> Sterility	
III. — PATHOLOGY OF THE VAGINA AND UTERUS	
<i>A.</i> Anomalies of development and modifications of form and position	
1. Defective development of the vagina and uterus	
<i>i.</i> Malformation of the sexual organs	
<i>ii.</i> Atrophy of the uterus	
<i>iii.</i> Hypertrophy of the uterus	
2. Modifications of form and position of the uterus and vagina	
<i>i.</i> Versions and flexions of the uterus	
<i>a.</i> Anteversions and antelexions	
<i>b.</i> Retroversions and retroflexions	
<i>ii.</i> Prolapse of the uterus and vagina	
<i>iii.</i> Rupture of the perineum. Restoration of the perineum	
<i>iv.</i> Inversion of the uterus	
<i>B.</i> Inflammation of the mucous membrane of the genitals	
1. Inflammation of the vulva	
2. Inflammation of the vagina	
3. Inflammation of the uterine mucous membrane	
<i>a.</i> Vaginismus	
<i>b.</i> Gonorrhœa in women	
<i>c.</i> Polypi of the mucous membrane. Follicular hypertrophy of the cervix	
<i>C.</i> Inflammation of the uterine parenchyma	
1. Acute metritis	
2. Chronic metritis	

CONTENTS.

III. — PATHOLOGY OF THE VAGINA AND UTERUS. — *Continued.*

- D. Tumors of the vulva and vagina
- 1. Tumors of the vulva
- 2. Tumors of the vagina
- E. Tumors of the uterus
- i. Myoma, Fibroma
- ii. Malignant tumors of the uterus
- a. Adenoma of the uterus
- b. Carcinoma of the uterus
- i. Carcinoma of the cervix
- ii. Carcinoma of the fundus
- c. Sarcoma of the uterus
- d. Tuberculosis of the uterus

IV. — OPERATIONS IN THE VAGINA

- 1. Vesico-vaginal fistula
- 2. Recto-vaginal fistula
- 3. Resection of the external urethral orifice

V. — OPERATIONS ON THE UTERUS

- 1. Division of the external os
- 2. The annular wedge-shaped excision of the cervix
- 3. Operation for ruptured cervix
- 4. Amputation of the cervix
- 5. The high excision of the cervix
- 6. Extirpation of the uterus through the vagina

VI. — DISEASES OF THE TUBES

- 1. Salpingitis. Hydro-Hæmato-Pyosalpinx
- 2. Diseases of the walls of the tubes
- 3. Tubal pregnancy
- 4. Tumors of the tubes

VII. — DISEASES OF THE BROAD LIGAMENTS

- 1. Parametritis
- 2. Extra-peritoneal hæmatoma
- 3. Tumors of the broad ligaments

VIII. — DISEASES OF THE PELVIC PERITONEUM

- 1. Perimetritis
- 2. Intra-peritoneal Hæmatocele

IX. — DISEASES OF THE OVARIES

- 1. Inflammation of the ovary
- 2. Tumors of the ovary
- 3. Dermoid tumors of the ovary
- 4. The solid tumors of the ovary
- a. Fibroma of the ovary
- b. Carcinoma of the ovary
- c. Sarcoma of the ovary
- d. Tuberculosis of the ovary
- 5. Ovariectomy
- Complications
- After-treatment
- 6. Castration

INDEX OF AUTHORS

INDEX OF SUBJECTS

ANNALS
GYNÆCOLOGY

A MONTHLY REVIEW

OF
GYNÆCOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY

EDITED BY
E. W. CUSHING, M.D.,
BOSTON.

WITH THE COLLABORATION OF

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FEBRUARY, 1888.

CONTENTS:

	PAGE		PAGE
NOTES ON USE OF ELECTRICITY IN EXTRA-UTERINE PREGNANCY.		TUBAL PREGNANCY	229
Matthew D. Mann, A.M., M.D.	193	ANATOMY OF THE CELLULAR TISSUE OF THE PELVIS	231
TUBAL PREGNANCY — RUPTURE — RECOVERY.		ABDOMINAL SURGERY.	
E. W. Cushing, M.D.	197	J. Greig Smith, M.A., F.R.S.F.	240
OBSTETRICAL SOCIETY OF PHILADELPHIA	203	REVIEW	277
EDITORIAL	210	HOSPITAL REPORT	280
PUBLISHERS' NOTICE	212		
TWELVE CASES OF RUPTURED TUBAL PREGNANCY . . Prof. Lawson Tait	213		

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Alcoholic Matter	1.97
Organic Matter	16.45
Ash	0.42

"At a glance it will be seen how much valuable life-supporting material is concentrated in it, and what great blood-making qualities it has. In May, 1885, I had the honor to report before the Connecticut State Medical Society 79 capital operations, in which I depended almost entirely on this form of alimentation, with only three deaths. The operations included a large range of surgical cases, all involving the integrity of life or limb, and including several of the rare and more difficult operations."

Extract from Essay read before the American Medical Association at Richmond, Va., 1886. G. R. Shepherd, of Hartford, Conn. :—

"In presenting these cases, gentlemen, I have no pet theory to advocate, nor any hobby to ride. They are simple facts from my personal experience, in relation to the use of certain food extracts that I believe are not as well known to the profession as they should be, and in offering them to you it is with a simple desire to add a little to the general fund of practical experience and with the hope that some of you, at least, may find these foods of as much service in your daily practice as I have in mine."

Extract from letter in regard to Essay read before the American Medical Association at Washington, D.C., by B. N. Towle, M.D., of Boston :—

"GENTS, — In answer to your inquiry as to what form of Raw Food I used in obtaining the results reported in my paper read before the American Medical Association at Washington, D.C., I reply that I used several forms, but the one I relied upon was your Liquid Food.

"I am sure that a judicious use of your food will be the means of saving many valuable lives, and that no ethical sensitiveness as to the names of persons producing valuable combinations should deter me from stating the name of the preparations from which these results have been obtained.

"Respectfully yours,

B. N. TOWLE, M.D."



Plate V.

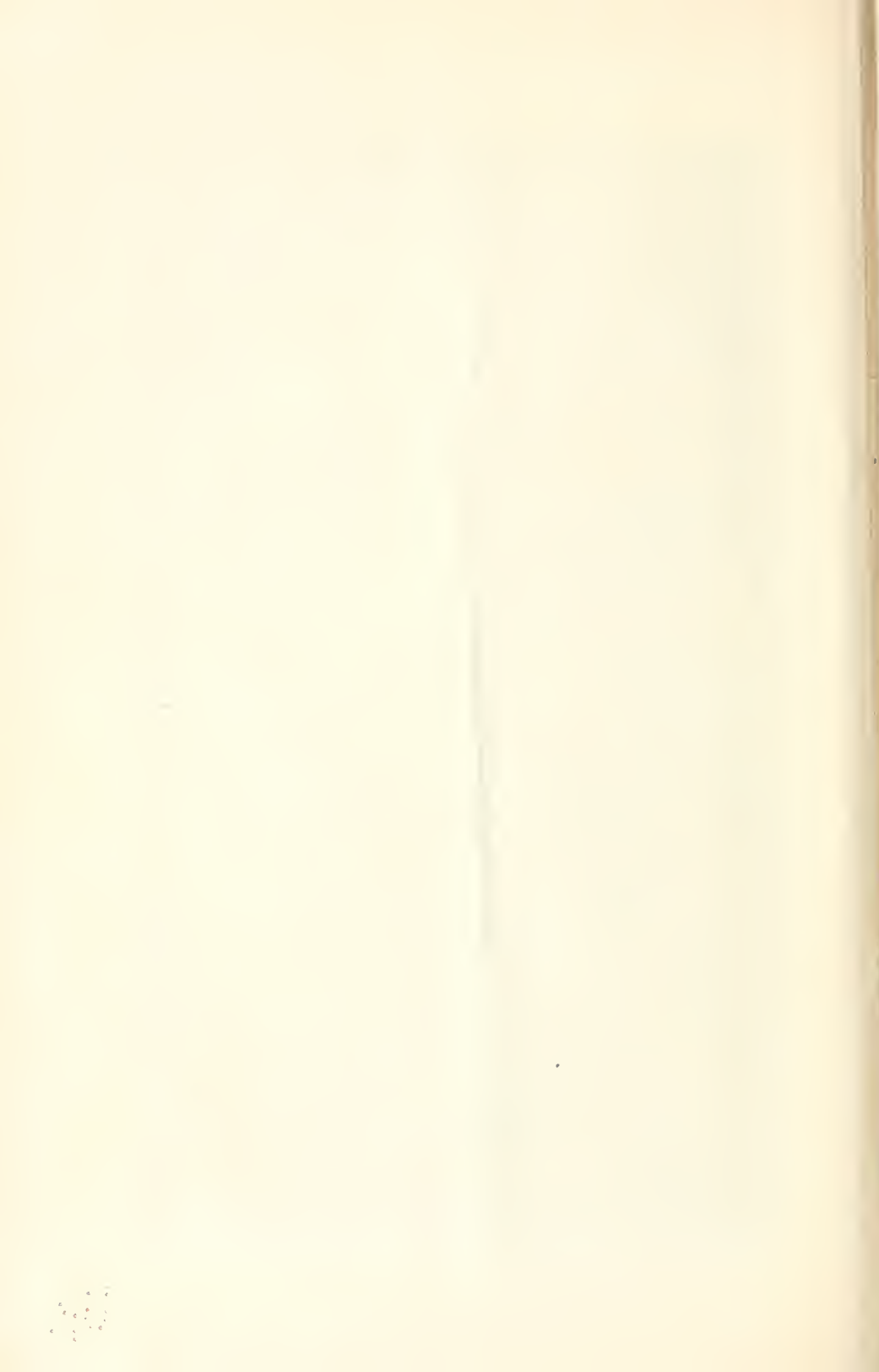




Plate VI.



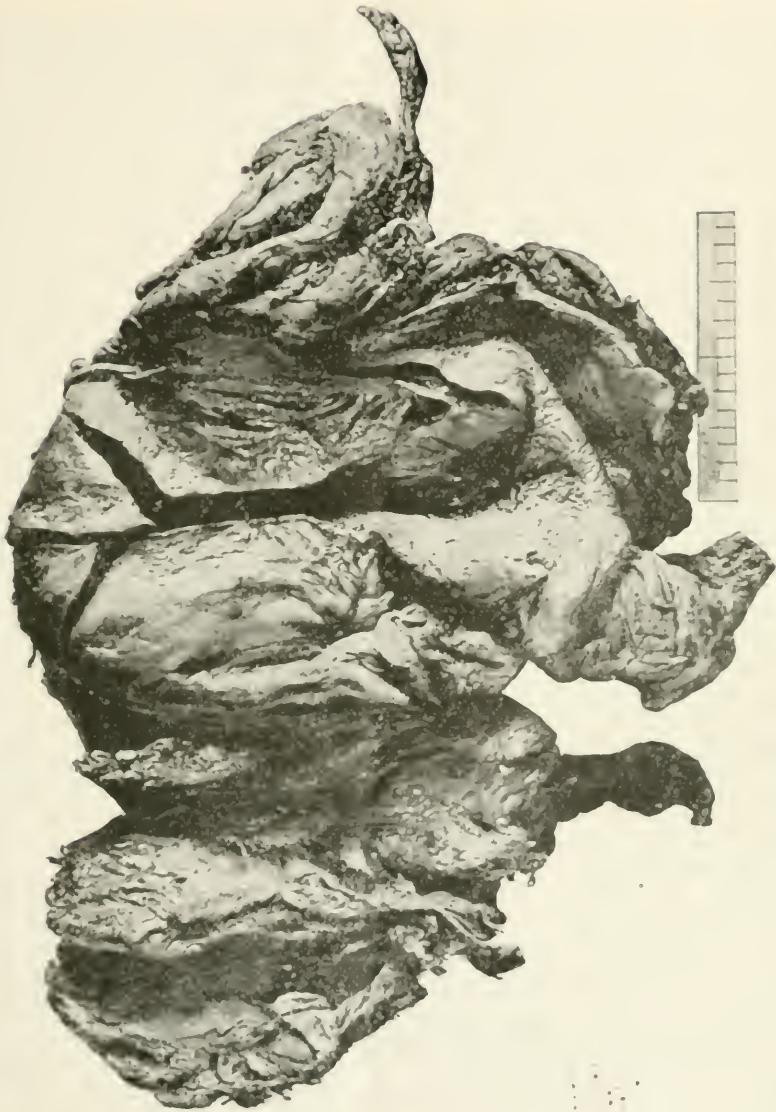


PLATE VII





Plate VIII.



ANNALS OF GYNÆCOLOGY.

VOL. I.

FEBRUARY, 1888.

No. 5.

NOTES ON THE USE OF ELECTRICITY IN EXTRA-UTERINE PREGNANCY.

BY MATTHEW D. MANN, A.M., M.D.,

Professor of Obstetrics and Gynecology in the Medical Department of the University of Buffalo.

ONE objection which has been raised against electrical fœticide in extra-uterine pregnancy is that the diagnosis cannot be made in time. This matter, however, seems now to be set at rest, and even Mr. Tait, who formerly laughed at the ridiculous proposal, as he called it, of killing the child by the current, now says, that he leaves the discussion of the propriety of this proceeding to those who see the cases before rupture has taken place, as he does not.

That the diagnosis can be made before rupture, is proved, if by nothing else, at least by the cases of Thomas, Lusk, Chadwick, and Janvriin. In each of these cases the diagnosis was made early, and the fœtus obtained later as proof of its correctness.

Still there is no doubt that the symptoms and diagnostic features of the conditions are even yet too little understood, and that many cases go on to rupture which should have been sooner recognized and properly treated. A careful study of the twelve cases recently reported by Mr. Tait shows that at least some of them belong to this category. In some cases, undoubtedly, the difficulties of diagnosis are great; but they are the exception.

Granted that the diagnosis can generally be made early, have we a settled and reliable method of treatment? There is no more burning question before gynecologists to-day. These cases are not rare, as was formerly supposed. Thomas and Tait have each seen more than thirty cases. Others have seen considerable numbers. It has been my good fortune to have seen seven cases within a few years. The question of treatment may come up for any of us to decide at almost any time.

Of all the methods which have been suggested, but two survive, — fœticide or removal of the sac, electricity or laparotomy. Of these it seems to me that electricity should be the first choice. What advantages does it offer? I answer, it is easy of application, certain, free from danger, and does not complicate the case if it fail.

It is easy, because any one possessed of ordinary medical knowledge and skill can procure a powerful battery and pass a strong current through the sac. One electrode must be against the sac within the vagina or rectum, as the case may be, and the other outside over the abdomen. On no account should the sac be punctured with the galvanic needle. This must be insisted upon as unnecessary and dangerous. To penetrate the sac is to invite suppuration and sepsis.

Granted, then, that electricity can be easily used, is it certain? To this I answer at once, Yes. I know of but one case in which it has failed to save the woman when properly used, the case of Dr. Janvrin. (*Gyn. Trans.* Vol. XI.) On the other hand, Dr. Thomas has used it twelve times with unfailling success. To this I can add four cases which have come under my observation, besides the case of Dr. Stoddard, published by me. (*Med. News*, July 11, 1885.) If more were needed to prove the point, a greater number of cases might be collected; for many have been, and more are constantly being, reported. Of failures we hear nothing. The power of currents from an ordinary battery to destroy life has been proved experimentally by Landis, who killed fish and other animals by passing a current through the water in which they were. There is, therefore, nothing improbable in the method.

But is it free from danger? Dr. Janvrin's case died from rupture of an artery on the sac wall. The sac did not rupture until eighteen hours after galvanism had been applied. Dr. Janvrin thinks that the galvanism in all probability had nothing to do with this result, and as far as I can find, this is the only case where hæmorrhage and death have followed a proper application of electricity. Dr. Janvrin was able to find only three cases in literature, including his own, where rupture of a vessel caused death without rupture of the sac. Such cases, then, are very rare, and the probability of such an event is hardly a valid argument in favor of laparotomy.

There is another danger which deserves consideration. At least two cases have been observed where, after being killed, the fœtus has ulcerated its way out. This is unquestionably a danger, but it has so seldom occurred that it is not worth considering. If it does occur, it is not likely to be dangerous to life, though tedious and annoying.

Mr. Tait suggests — he has no absolute proof — that the continued growth of the placenta may be a danger. Until we have more facts we

need not worry about this. It is only a conjecture. We may then dismiss the dangers of electrical feticide as being of little weight.

Now, what can be said of the rival method, laparotomy? If rupture has occurred, there is no rivalry. Laparotomy it must be. If rupture has not occurred, again I should say there is no rivalry. Electricity should always take precedence.

Why? Just because of the doubt which will generally hang both over the diagnosis and the necessity for laparotomy. We may be sure of our diagnosis, morally sure, but until rupture has taken place it will be very hard to be so certain ourselves as to enable us to persuade a hesitating and fearful patient of the necessity of so grave and serious an operation. The operation requires special skill and experience; and how many operators, in this country at least, are likely to get this experience? Mr. Tait, speaking of operating after rupture, and the conditions do not greatly differ, says (quoted by Janvrin, *loc. cit.*), "These adhesions occur to every one of the pelvic viscera, and there can be little doubt that for success in dealing with them very considerable experience with the finger-tips will always be necessary, for it can only be after prolonged acquaintance with the sensations which are conveyed by different structures to the fingers that adherent tube and placenta can be recognized from coils of intestine, broad ligament, and uterus." Any one who has removed adherent tubes and ovaries knows what that means. Working deep within the pelvis with rigid and perhaps thick abdominal walls, is very different from manipulating within the abdomen when the walls have been thinned and stretched by a large tumor.

We have many laparotomists among us, perhaps too many, but there are few experienced, by the standard of Tait and Martin. Such being the case, it would seem to be the part of wisdom for most of us — in this country, I mean — to first give electricity a fair trial. Suppose it fail, what then? We certainly have not complicated matters, and still have laparotomy in reserve, with just as good a chance of success as before the current was applied. Or suppose we have made a mistake, would it do any harm to pass a current through a tumor, or an inflammatory product, or almost any condition which might be mistaken for extra-uterine pregnancy? Unquestionably not.

To repeat, then, in the treatment of extra-uterine pregnancy before rupture of the sac, until laparotomy has been proved to be easy and uniformly successful, we ought in every case to give precedence to electricity. This conclusion seems to be both logical and just.

The remaining question which confronts us is, what are the limitations of electricity as regards time? The end of the fifth month has been

assigned as a limit to its usefulness. This is entirely arbitrary, and in view of the disastrous results obtained by operating on the living fœtus near the end of pregnancy, — primary laparotomy, so called, — as compared with the good results obtained when the fœtus has been some time dead, the question very naturally presents itself, why not use it at any period of pregnancy, provided it will do the work? Kill the child and then operate. This is still to be tested, and, until it has been, we must withhold our opinion. There can be no doubt that an attempt at killing the fœtus at any time would be fully justifiable.

A few additional words in regard to the details of the treatment may be useful; whether the induced current or the galvanic (with interruptions) is used seems to make little difference.

If the faradic be chosen, the secondary or combined currents should be used. The current must be as strong as the patient can possibly bear; and, if this does not suffice, owing to a peculiar susceptibility, to effect a change in the symptoms within a few days, it may be necessary to give an anæsthetic, so as to be able to use a stronger current. A single-cell battery, with a large coil, will generally be enough. Each application should last half an hour, and, from Landis' experiments, it might be worth while to continue it even twice as long, should a shorter séance fail. As there is no way of measuring the induced current, no positive rule can be given as to the strength to be employed.

As to the galvanic current, more precise rules can be given. A strength of from 10 to 20 milliamperes is required; one pole over the sac outside, and one in the vagina. The current must be interrupted 120 times to the minute. The negative electrode should be a metal ball, while the positive pole may be a large sponge, or, better, a metal plate, six inches square, covered with chamois or absorbent cotton.

Whichever current is used, two or three applications may be enough; but more may be required, and they must be kept up and the strength gradually increased until the symptoms begin to abate; in no other way can we be sure that the child is dead.

In two of the cases observed by me the first sign of improvement was relief from pain, and, almost coincident with this, a shrinking of the breasts. Diminished tension of the cyst soon follows, and all the symptoms improve. In neither instance is the action of the current electrolytic; but the current acts directly on the fœtus, destroying it, by nervous shock, much as a man is killed by lightning.

TUBAL PREGNANCY—RUPTURE—RECOVERY.

BY E. W. CUSHING, M.D., BOSTON.

Read before the Gynecological Section of the Suffolk District Medical Society.

Mrs. X., aged 33, was in good health, had been married thirteen years, had borne six children, the youngest two years old; had miscarried one year previous to the illness here described. Menstruation painless, scanty, and rather irregular at periods of five to six weeks.

Last menstruation Dec. 22, 1886, lasting four days. Early in February, menstruation not having recurred, patient began to feel that she was pregnant, having the same subjective symptoms by which in all her previous pregnancies she had recognized her condition during the second month.

On February 10, seven weeks from last menstruation, she was suddenly taken with very severe pain in the region of the uterus and of the left groin. This lasted some hours, coming on at bedtime without any apparent cause; it yielded, however, to Dover's powder and a hot poultice; and as in the morning a slight bloody discharge had appeared, the whole affair was attributed to the onset of a menstruation which had been suppressed for a time, although she had never before suffered from pain at the monthly periods.

February 14. While still menstruating a little, Mrs. X. went to a reception, and felt faint and weak, with slight pain in hypogastrium and left iliac region.

February 16. When dressed to go out was suddenly seized by severe pain, similarly located; tried to undress quickly, and fell fainting on her bed. Pain was relieved, in a few hours, by Dover's powder and hot cataplasms. The faintness did not last long. It was supposed that menstruation had ceased too soon.

February 17. Better, in every way; intended to go to the theatre, but, owing to bad weather, postponed it. In spite of the supposed attempt at menstruation the subjective symptoms of pregnancy continued; the breasts were, moreover, enlarged and tender, with some of the lobules swollen and hard.

No examination of the uterus was made, as the gravity of the situation was not at all suspected.

February 19. Eight weeks from the termination of the last menstruation, in the afternoon, at the theatre, while witnessing a very exciting play, the patient was seized suddenly with very severe pain in the same place as

before; it gradually grew worse, with feeling of faintness. Mrs. X. left the theatre and walked, with difficulty, to a store near by, riding home in a carriage in great pain, the horses having to go at a walk. Arriving at her house, she was able to mount the stairs with assistance, and was rapidly undressed, the pain increasing with an indescribable feeling of anxiety and symptoms of shock.

In about an hour patient said that she was dying; the hands and feet were numb, the pain intense, the intellect clear.

I gave her a hypodermic of morphine, and, realizing at last the fact of a tubal pregnancy and probable rupture, I took measures to provide for counsel, and an immediate laparotomy if it should be necessary. By slight stimulation, however, and warmth to the extremities, the patient rallied in about an hour. There were no symptoms of great hæmorrhage, no sighing, yawning, extreme pallor, etc.; rather symptoms of shock, as from some serious internal injury.

On vaginal examination, the uterus was found high up, about double its normal size, apparently pushed to the right, and movable; no tumor could be felt in the tube.

February 20-26. Patient remained quiet in bed, with very little or no pain. A slight sanguineous discharge was noticed on the 20th (which continued during the next three months). By the 22d the patient was very sure that she was no longer pregnant; the breasts grew flaccid, normal appetite returned, and it seemed as if the whole affair might have been an early miscarriage. Nevertheless, on the 26th, some very severe pains occurred, although patient had remained quiet in bed, and it seemed best, therefore, to make an examination under ether.

This was made by Dr. H. O. Marcy and myself on the morning of the 27th. We found the uterus high up and to the right, enlarged to double the normal size, no tumor to be felt at the vault of the vagina, but an indistinct feeling of resistance high up on the left side.

In the abdomen, however, on the left side, two inches above the crest of the ilium, three inches to the left of the navel, was a mass as large as a man's fist, pretty deep in the abdomen. It seemed movable, rather hard, and attached more at its inferior portion than elsewhere; there was no apparent attachment to or connection with the uterus. There was no pelvic hæmatocele, and the diagnosis of tubal pregnancy appeared not warranted. It was feared that there might be a tumor of some kind complicating normal pregnancy.

On the afternoon of this day there was another fearful attack of sudden pain, lasting several hours, causing the patient to scream until the pain was quieted by chloroform and morphine.

The next day she was weak, had to be moved in bed on a sheet, had some fever, temperature 100, pain along course of left psoas muscle, left leg drawn up.

March 1. The slight uterine hemorrhage had continued from Feb. 20, and to-day there was found on the napkin a piece of membrane apparently decidual, about two inches long and one inch wide in the middle. Nothing of the nature of an ovum came away at any time.

I examined the specimen carefully, and found it to contain decidual cells; the diagnosis of decidual membrane was afterwards confirmed by Drs. Fitz and Minot.

The symptoms of mild peritonitis continued for a week or more, temperature about $101\frac{1}{2}$, the left leg drawn up, and an increase in size of the mass in the left iliac region and left flank was observed.

Then the condition improved, the leg could be straightened, and the appetite improved, the fever diminished, and everything seemed favorable, when, on March 10, there came suddenly a most frightful attack of pain, lasting six hours, and requiring the use of chloroform, as it could not be subdued by the use of morphine in any safe doses.

The uterine discharge continued, and although the fever did not return, yet the tumor on the left side increased steadily, being now larger than the head of a child at term, and about the end of March it seemed to be growing rapidly, and was prominent in the abdomen, although the general health was improving and there was no pain.

March 23 another consultation was held, at which Drs. Homans and J. Reynolds were present. The tumor occupied the region in front of the left kidney, reaching from beyond the median line to the left flank, and from above the navel into the left iliac fossa. The apparent semi-circumference, through and including the abdominal walls, was eight inches; it could be felt to fluctuate with one hand over the abdomen, and the other behind the loin; could be rolled laterally but not up and down, and seemed to run down pear-shaped into the pelvis, and to be fixed in the neighborhood of the psoas muscle. Nothing could be detected by vaginal examination; the uterus was high up, and no larger than in February.

The diagnosis seemed more difficult than ever. It could not be determined whether it was

1. An ovarian tumor, which by some twist of the pedicle had produced a miscarriage, and set up inflammatory symptoms.
2. An abdominal pregnancy, which was going on after rupture of a tubal sac.
3. A serous peritonitis, consequent to a miscarriage.

4. A hæmatoma and serous peritonitis, consequent to a tubal pregnancy, which had burst between the folds of the broad ligament.

On the whole, No. 1 seemed probable ; against No. 2 was the absolute conviction of the patient that she was no longer pregnant, with the falling in of the breasts, which had been tense and hard, besides the great rarity of the condition.

Against Nos. 3 and 1 was the certainty that no ovum had been discharged, while the decidua which had come away was a sure token that pregnancy had existed.

The fourth possibility would explain the symptoms, but it seemed to be such a rare occurrence that it was very improbable that this explanation could be correct.

It was agreed to wait and do nothing, as the general condition of the patient was excellent.

April 16. Semi-circumference of sac 9 inches.

April 25. Semi-circumference of sac 10 inches.

Prof. Fitz now examined the patient in consultation, and expressed the opinion that the tumor was probably a serous cyst, caused by a serous peritonitis, as the shape and attachments of the tumor, and the way it was packed into the left flank, were now sufficiently characteristic to make it improbable that the cyst was ovarian. He expressed a very favorable prognosis. Dr. Marcy, on the other hand, who had seen the case frequently, was inclined to think that an abdominal gestation was in progress, and that a laparotomy was indicated.

As there were no urgent symptoms, however, it was agreed that an expectant treatment be followed. By May 1 the tumor seemed softer, and by May 14 it was a trifle smaller.

June 1 it was certainly smaller. Patient was moved in an ambulance to the sea-shore.

The sanguineous discharge continued from the vagina continuously but slightly ; the increase at the menstrual periods for May and June was distinct. July 1 discharge had ceased. Aug. 1 the tumor is of the size of the two fists ; patient going about and in good health.

September 30. The tumor can no longer be found, even on bi-manual palpation.

The patient is completely restored to health and strength.

I have reported this case at some length, because it illustrates the difficulties of diagnosis in cases of abdominal disease. Of course, the fortunate recovery precludes an absolute diagnosis, but I think there is little doubt that it is a case of tubal gestation.

There was undoubtedly pregnancy.

No ovum ever came away, only a piece of decidua. The supposed rupture of the tube occurred at the usual time, or rather earlier, — eight weeks from last menstruation; its early occurrence was undoubtedly fortunate in limiting the hæmorrhage, and the size of the ovum to be disposed of afterwards.

The fact that no pelvic hæmatocele was observed can only be explained by supposing that the rupture occurred between the folds of the broad ligament, and here the observations of Schlesinger (published elsewhere in this number) are of great interest, as showing how blood effused at certain points between the folds of the broad ligaments would run up along the track of the *psoas* muscle, behind the peritoneum, even to the region of the kidney, forming an abdominal hæmatoma in the region where the first mass was observed, under ether, on Feb. 27, eight days from the rupture of the tube. The first signs of inflammatory affection of the peritoneum were distinctly along the line of the left *psoas* muscle, and all the pain between and even during the severest attacks was referred to this region. There were never any expulsive pains nor cramps in the uterus itself. No other hypothesis, except that of tubal pregnancy, will account for all the symptoms in this case, while there is nothing in the history which cannot be explained by this hypothesis, except the fact that the patient fortunately recovered.

This leads to a consideration of the question whether tubal pregnancy is so uniformly fatal as is usually supposed.

I think that we may fairly assume that the weight of modern observation goes to show that this accident is much more common, and much less certainly fatal, than it was formerly considered to be.

Of course, all the cases in which the diagnosis is definitely settled were, until recently, the fatal ones, where death was followed by autopsy.

Now a new series is arising, where the diagnosis is confirmed by laparotomy. Of these a considerable number are now published where an operation was performed several days or weeks after the rupture of the tube, showing a collection of clots in the abdomen, and serous peritonitis with symptoms much resembling those of the case which I have here reported.

Prof. Lawson Tait has published recently twelve more such cases, with eleven recoveries, making thirty-five tubal pregnancies operated by him after rupture, with thirty-three recoveries.

To such cases as the above must be added a whole series of affections in which the diagnosis is usually made, simply of inflammation after miscarriage, or of pelvic hæmatocele, where, however, a close study will show both that pregnancy has existed, and that no ovum has ever been

discharged; and it is very probable that increased accuracy of observation and diagnosis will materially increase the number of cases which will be reasonably classed as tubal pregnancy. It is certainly a significant fact that the overwhelming majority of pelvic hæmatoceles occur in women who are married, or at least living in relations which render them liable to be pregnant.

It is evident that when a pregnant tube enlarges there is a certain chance that the rupture, which comes sooner or later, may occur between the folds of the broad ligament; that in such cases the blood will not be so freely effused as when the rupture is into the peritoneal cavity, and thus there is an opportunity for the hæmorrhage to creep along, stripping up the peritoneum, and forming a hæmatoma in the locations described by Schlesinger. In fact, rupture of a pregnant tube offers far the easiest explanation of hæmatocoele, whether intra or extra peritoneal, in healthy married women who show no signs of varicose veins. I am now seeing a good many cases of pelvic and abdominal abscess where the first inception is attributed to an abortion, although usually there is very little proof that an abortion occurred, except that after missing one or two menstrual periods there have been great pain and some hæmorrhage.

Lastly, in regard to operation. Although in my case laparotomy did not seem to be indicated, and the result proved that it was fortunately unnecessary, yet the surprising success obtained, not only by Prof. Tait, but also by various other operators, shows that laparotomy offers a good prospect of cure even under very adverse circumstances. In collecting the histories of eight tubal pregnancies, which I have republished with plates of the specimens, I have examined the records of many more such cases, and find that in all there is time enough for a prompt diagnosis and operation. Some die in seven or eight hours, more live fifteen or twenty hours; while Tait's operations throw light on a host of other cases of "peritonitis" where the patients were living and were saved weeks after the primary rupture, although the symptoms of peritonitis and of repeated hæmorrhages were so severe that they would undoubtedly have succumbed without operative interference. I think that no one can study the plates published in the ANNALS OF GYNÆCOLOGY, without realizing how simple and easy an operation would be if done soon after the first rupture. Only the interstitial pregnancies would be more difficult.

The matter of the most importance, however, is the early and accurate diagnosis; and my object in publishing this case is to assist in enabling other physicians to be brighter than I was, and to recognize the condition before the rupture occurs. The occurrence of a *severe* unaccustomed pel-

vic pain in a woman who has missed one or two periods should arrest the attention of the physician; the recurrence of similar pain (perhaps with hæmorrhage and some fever) should excite his suspicion of tubal pregnancy; now is the time for careful physical examination, to-morrow the catastrophe may have occurred.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

THURSDAY, DECEMBER 8, 1887.

THOS. M. DRYSDALE, M.D., in the chair.

Dr. J. PRICE presented a series of specimens of mixed tumors occurring in the pelvis. [The paper will appear in full in a subsequent number of the ANNALS.] He also reported a case of "Ruptured Tubal Pregnancy."

"Ovarian Abscess." Dec. 25, Mrs. F., aged 32 years, married 9 years, never pregnant. The patient of Dr. Donges, who had diagnosticated ovarian disease. In bed for the last month, high temperature and severe pain, most marked in the right side, diarrhœa. Day of operation temperature was $103\frac{1}{2}$; pulse 146; general condition alarming. Operation; large abscess of ovary right side, bowel adhesion necrotic, abscess ruptured in enucleation, surrounding parts cheesy; marked fecal odor, free irrigation, drainage, fecal odor from tube. Card from Dr. Donges 2d day after operation: "Mrs. F. doing very nicely. Temperature normal, pulse 92, no nausea." "Fifth day, patient doing remarkably well, no change since last card, but steadily improving." Letter from Dr. Donges, Jan. 2: "Mrs. F. is doing remarkably well." No opium after operation notwithstanding it had been freely used before. General improvement, eating and sleeping well, convalescing rapidly. Tube out on 5th day and bowels acting kindly. Now, the 11th day, is still doing well.

Dr. J. PRICE said the drainage-tube should be removed as soon as the blood ceased to appear in the fluid, which became scant and serous. He used a cotton rope in the tube; its withdrawal empties the tube and cleans out the perforations, which otherwise become clogged with lymph coagulations. He now never washes the tube out, but keeps it perfectly dry and clean by frequent swabbings with cotton and the reintroduction of the cotton rope, which acts as a capillary drain. After removing the glass tube he always puts in a small rubber one, which is gradually withdrawn and cut off inch by inch, especially in the treatment of pus cases. The drainage-tube has an assured position in pelvic surgery. Dr. Kelly said, "I always deliver my tubes by steps where the tract has suppurated, but in the sweet recent cases just mentioned by Dr. Price I deliver at once and close without fear, as soon as secretion has ceased. The rubber tube is not necessary. Dr. Price has not in his history presented sufficient evidence to warrant the inference that the shrivelled-up specimen passed around is an extra-uterine pregnancy."

Dr. PRICE remarked that if the incision was long the toilet of the peritoneum could be carried out with a care that rendered the use of a drainage-tube unneces-

sary in some few cases, but the long incision involved increased danger of hernia. The "three-stitch incision" requires the tube, perhaps for a day only, in cases which require enucleation, with tissues healthy. Dr. Homans, who made a long incision, had nearly 8% of hernia; he had used drainage-tubes in fifteen cases only out of nearly four hundred operations. You can single out the operators that use the drainage-tube freely, by studying the mortality. Martin does not use the tube, and lost twelve cases out of seventy-two in operations for tubal diseases. When he ceases to save ninety per cent. of his cases he will give away his instruments. The use of the tube reduces the mortality wonderfully.

Dr. B. F. BAER said that he had never seen an ovarian abscess which had a pyogenic membrane. He does not think a drainage-tube should be used in every case. It sometimes causes long-continued trouble, from exudation of lymph around the tube: the tube is an irritant, and should be removed early. The management of the tube should never be intrusted to a nurse.

Dr. M. PRICE exhibited a kidney, which he had removed in consequence of a perforating bullet wound. The patient, a young girl, was handling the weapon when it exploded, the ball entering in front on the right side and passing through the liver and kidney and burying itself in the spinal muscles. At the time of the operation, twenty-four hours later, the pulse was 150, the temperature 103°; peritonitis had set in, and the patient was in a collapse; an incision six inches long was made and arterial blood was seen escaping from the kidney, which it was thought best to remove. The liver wounds were dry and not oozing. Rapid improvement continued for nine days, but there has since been a rise of temperature, and now the nineteenth day temperature is 100°, pulse 108, and all doing well.

Dr. WILSON spoke about the question of the compensatory action of the other kidney. Although this is sometimes quite sufficient, it is not always so, and the loss of one kidney is oftentimes a cause of death, the remaining kidney being unable to assume the functions of the one removed.

Dr. KELLY said that Dr. Price would have to defend himself better for removing that kidney. The indication was almost as great for removing the liver, which the ball had also traversed. The hilum was a half-inch distant, and a suture would have been safe and checked hæmorrhage. I thus stopped the flow following the puncture of a trocar in a case of hepato-phlebotomy which I performed a few weeks ago. I think Dr. Price will find sufficient evidence for this late rise of temperature in a focus of suppuration around the ball in the lumbar muscles.

Dr. J. PRICE remarked that a large quantity of arterial blood had been voided from the bladder a few hours after the injury; this hæmorrhage was irregularly recurrent, showing its kidney origin, and that large vessels about the hilum of the kidney had been wounded. Stitching of the kidney would not have been sufficient; incision and ligation was out of the question. All the indications were for removal. The diagnosis had been clearly made of renal injury.

Dr. M. PRICE said that the kidney lay far up under the liver, and was hard to get at; that even if a suture could have been put in the anterior wound, it would have been utterly impossible to have reached the posterior one excepting by another incision through the back; besides this, the blood welled up so freely that it was not possible to see exactly what he was doing, and he had to trust to his

sense of touch. He could not account for the high temperature at this late date, excepting it be from the collection of pus at the end of the tube, which was not removed as it should have been.

Dr. B. F. BARR presented the specimen and read the following report of "A case of Traumatic Hæmorrhage into an Ovarian Cyst followed by Peritonitis. Operation — Recovery." I feel warranted in presenting the specimen and relating the history of this case, because of its unusual character. E. D., age 45; married; seven children, youngest 7 years; miscarriage two years ago; had always until the present trouble enjoyed good health. In December, 1886, while engaged in rearranging her furniture she lifted one end of a heavy chest. She soon after became conscious of a slight pain in the left ovarian region, but she continued with her usual work. That night, however, she was awakened by a sharp pain in this region, so severe as to cause her "to bend and writhe in agony." The pain extended down the left thigh and to the back, was accompanied with nausea and vomiting, and continued with great severity during the entire night before she obtained any relief whatever. On the next day her entire abdomen had become very tender and swollen (tympanitic), but the severe pain of the night before had subsided. She gradually recovered from this attack and was about again within two weeks, but she still had occasional attacks of sharp pain and was treated for neuralgia. Soon after this she noticed that her abdomen was larger than usual; she had changed physicians, and was treated for "dropsy and worms" by free purgation. This greatly prostrated her, and caused a return of the pain and other symptoms of the first attack.

My friend, Dr. A. P. Adams, was now called, and found the patient in great agony, the pain being most severe in the left ovarian region, but extending over the entire abdomen, which was tympanitic. The thighs were flexed and her expression anxious. Temperature, 103° ; on the next day it had risen to 104° . She remained very ill through the next few weeks, after which she gradually improved. When the tympanites and tenderness had subsided enough to permit of an examination, Dr. Adams discovered a cystic tumor in the lower abdomen, which he correctly pronounced ovarian. As soon as she was able to be moved the patient was sent to me.

On examination, with the patient in the dorsal position, I found the abdomen distended by a circumscribed mass which occupied a position between the umbilicus and the pubis, projecting, and about the size of the pregnant uterus about the sixth month, though not symmetrical, being to the left of the median line more than to the right. There was resonance over the entire surface of the abdomen, even over the tumor on light percussion; deep percussion, however, gave a dull note. By palpation the tumor was found to be fixed to the abdominal walls and deeply in the left pelvic region. Vaginal examination showed the uterus to be retroverted, and upon it the lower surface of the abdominal tumor.

To the left of the uterus a nodular mass was felt, apparently connected with the lower surface of the tumor. Movement of the tumor caused the uterus to move with it. Fluctuation was elicited by bimanual palpation.

I advised immediate removal of the tumor, although the patient had not yet fully recovered from the last attack of peritonitis; temperature still above 100° , sometimes 101° in the afternoon. This advice was based upon the recurrent character of the inflammation and its probable traumatic origin, twisting of a pedicle or

rupture of a blood-vessel. Rupture of an extra-uterine gestation sac had been suspected, although signs of pregnancy had been absent. There had not been suppression of menstruation, but since her first attack of pain her catamenia had been very profuse, lasting from ten days to two weeks.

Operation March 15, 1887. Incision three inches in length in the usual position and the tumor exposed. It was now found that adhesion between the cyst wall and that of the abdomen was so intimate that it was difficult to distinguish which was the cyst and which the peritoneum. I began by separating the tumor from the peritoneal surface, hoping to find a place where adhesions did not exist; but in this I was disappointed, for the peritoneum was firmly glued to the anterior and lateral surfaces of the cyst wall, while above, the intestines and omentum were closely adhered to it. The tumor was now tapped, and a thin, serous-looking fluid, tinged with blood, was drained away. The cyst was only partly emptied, as it contained a semi-solid material, which could not flow through the canula. Room had, however, been gained, so that the dissection could be continued. By a careful manipulation the upper part was separated from the intestine and omentum by amputating the latter, when it was found that the lower lateral surface was adherent to the sigmoid flexure, while the base of the tumor, broad ligament and uterus, were so united as to form one mass.

After further dissection the cyst was drawn out and the short, thick pedicle examined. This was found to contain masses of thick, clotted blood, both within and around it. After further cleansing and examining, this nodular mass was found to be the fallopian tube, distended at several points with clotted blood. A temporary ligature was now thrown around the base of the cyst, which was then removed. This facilitated the further dissection, which was necessary to form a proper pedicle, which was now transfixed and tied and the smaller mass cut away. The right ovary was healthy and was not removed. The abdominal cavity was next thoroughly cleansed, a drainage-tube inserted, and the incision closed. The patient recovered and went home on the twenty-eighth day after the operation; but it cannot be said of her that she recovered "without a bad symptom." She did comparatively well during the first four days, but on the fifth day her temperature increased to 103° , although there was no pain or other symptom of active inflammation. On the next day it was 104° . The patient now complained of pain at seat of pedicle, and the left leg was found to be slightly swollen. The drainage-tube was now removed, although there was still some discharge through it. The bowels were also moved by a turpentine enema. Her improvement after this was slow but sure, and she sat up on the eighteenth day.

Examination of the specimen after its removal showed it to be a thin, walled monocyst. It was quite half-filled with a fibrinous material, a portion of which is presented with the cyst. This was not attached to the cyst wall, and resembled coagulated blood in process of organization. The lining membrane of the cyst was smooth, except at several places where a dilated vein as large as a quill was apparent. The knotted, irregular mass which formed the pedicle was the fallopian tube and broad ligament. Why it was in this condition is difficult to determine, unless it was from twisting of the pedicle; but this could not be fully made out at the operation. The dilated condition of the veins in the cyst and in the pedicle, and the

evidence of hæmorrhage within the cyst cavity as well as around the pedicle, render it probable that rupture of blood-vessels from stasis had taken place.

Dr. B. F. BAER also presented the specimen and read the report of "A Case of so-called Ovarian Abscess, small suppurating Ovarian Cyst," occurring in a girl of 17 years of age.

B. C. was sent to me on November 1, 1887. Puberty was established at eleven years of age, or rather she began to lose blood from the womb at that time, for she has never normally menstruated. As a rule, there would be a metrorrhagia every ten days to two weeks, sometimes lasting a whole week, but usually only three or four days. No serious trouble attended this flow, except that she sometimes felt worn-out, although it was not at any time excessive. At first after puberty the intervals were longer, but gradually decreased until she was almost constantly flowing. She had never suffered much until last August, when she was taken suddenly with pain in the left ovarian region. The pain was sharp, cramp-like in character, and came on during the day, but she was not aware of any cause for it, such as over-exertion. The attack occurred a day or two after the cessation of one of these attacks of metrorrhagia. The pain increased in severity until it compelled her to go to bed, where she remained a week in great suffering under the care of her physician. She continued in bed four or five days after the pain had ceased, from prostration and under advice. After this there was an interval of thirty days before the flow returned, — the longest interval she had ever had. Then she began flowing again October 2d, and continued to flow regularly every day for the next thirty days, at which time she first consulted me. Examination revealed the vagina rather patulous, cervix soft, and uterus occupying a position behind the symphysis pubis, where it was held by a tumor which occupied Douglass' pouch. The tumor extended as high as the superior straight, and seemed about the size of a foetal head. It was rather elastic, apparently circumscribed and fluctuating. I prescribed gallic acid for the metrorrhagia, and advised rest. At the next visit I gave the patient ether, and determined that the tumor was almost certainly of a cystic character, and probably adherent to the posterior wall of the uterus and to the pelvic tissues generally. I advised its immediate removal, because of the grave symptoms which it had no doubt produced, and because of the fear of its rupture and possibly fatal injury to the patient.

She entered my private hospital on Nov. 22. Operation at 9 A. M., Nov. 24. An incision two inches in length was made in the usual position, and two fingers introduced into the peritoneal cavity. I found the omentum adherent to the posterior wall of the uterus and upper surface of the tumor. This I dissected off and found a tumor the size of a large orange, slightly flattened, occupying a position behind the uterus, extending to the left. It was adherent everywhere and seemed at first to be sub-peritoneal, but I soon discovered after beginning the separation of adhesions that my diagnosis of intra-peritoneal tumor was correct. The adhesions were quite firm, and it took me ten minutes of careful manipulation to entirely release the tumor, which I now brought up to the incision by placing two fingers under it. I next punctured it with a trocar and canular, and drained away about six ounces of thick laudable pus, when it readily passed through the incision. The tumor was of the left ovary, the pedicle was very small and short, consisting of the ovarian mesentery and ligaments. I could readily have removed it without remov-

ing the tube, so free was it from adhesions to that organ. Indeed, the tube seemed to be entirely free from disease. The opposite ovary and tube were perfectly healthy and were not removed. There was some hæmorrhage, but it ceased after a little sponging and the abdominal incision was closed, drainage being considered unnecessary.

The patient complained of great pain after recovery from the anæsthetic, and it required three hypodermics of morphia to relieve her. There was also violent reaction. Four hours after the operation the temperature was 102° , and the pulse 148. This violent reaction was no doubt emotional, for as soon as the patient became quiet the temperature and pulse returned to the normal, and did not again show the slightest indication of trouble. Her recovery was remarkably rapid and uneventful. She sat up on the eleventh and went home on the seventeenth day after operation. Examination of the specimen shows it to be polycystic, the larger cyst-cavity which contained the pus having a peculiar reddish, granular-looking lining membrane. At places papillary tufts are to be seen. The smaller cysts contained a clear fluid and have a smooth lining membrane. This case is interesting because of the early age of the patient, the early puberty, the frequent recurrence of the metrorrhagia, and the purulent character of the fluid contained in the cyst; the latter condition constituting what is commonly called ovarian abscess. This term is a misnomer. True ovarian abscess probably never occurs; that is, an inflammation in cellular tissues or stroma of the ovary which results in "a collection of pus surrounded by a wall of lymph," the surgical definition of abscess. When a pus cavity is found in an ovary, I believe its origin can always be traced to a previously existing cystic degeneration of the ovary, the purulent formation being secondary.

Dr. J. PRICE remarked that tubal disease may exist in virgins, the probable cause of infection being unclean hands and instruments of an examining physician. The small drainage-tubes were introduced in London by Dr. Bantock, and were of seven different lengths. A dangerous rise of temperature certainly did at times arise in some cases from emotional causes, a good example of which he thought had occurred in New York, at the Women's Hospital. A patient was operated on in one of the cottages, and was doing nicely; during convalescence she was moved into the hospital, much against her will; her temperature rose immediately, and she died in a few hours.

Dr. HIRST said that "emotional fever" was often observed after laparotomy. He had seen the temperature rise above 100° in an instant, because he had told the nurse in the hearing of the patient that "the stitches were to be removed to-morrow." He had seen some very extraordinary cases of emotional fever in the puerperal state, having more than once seen the temperature rise suddenly to 104° in consequence of a fit of weeping. This phenomenon was not very uncommon in the Maternity Hospital, where the patients are for the most part young unmarried primiparæ.

Dr. KELLY observed that instrumental infection of a healthy woman is a very real danger, to which many victims have been sacrificed. I advise aspiration in all small cystic tumors before proceeding to their delivery at the incision; in this way a certain proportion of lives will be saved by avoiding the frequently inevitable rupture with an escape of poisonous contents amongst the intestines. A

systematic use of the drainage-tube is advisable, but not such tubes as are in common use. My friend Dr. Dudley, of Chicago, uses a very delicate little tube which can be slipped in between the sutures and answers all purposes, especially used as I have long done, leaving in a piece of twisted absorbent cotton, which carries everything up from the bottom of the tube by constant capillary attraction.

Dr. DA COSTA remarked that he had used a tube with an outside diameter of only three-eighths inch four years ago, and did not think there was anything new about it, as he had at that time bought it ready-made from the shops.

Dr. LONGAKER believed that many cases of diseased tubes were due to filthy instruments and careless manipulation. A case had come under his care — an unmarried woman of undoubted virtue, suffering from bilateral disease of the appendages. Her history was that of dysmenorrhœa, for which the os had been incised. After this operation she was confined to bed for six months. Some months later she came into his hands, and was also seen in consultation by the late Albert H. Smith, who agreed in the diagnosis. The case passed out of his hands without operation. The conclusion that the operation was not done under perfect conditions is forced upon us, and also that by reason of this carelessness her condition was rendered worse than it had been.

Dr. DRYSDALE in reply to a question from Dr. Baer said that often when the ovarian cells are crowded together the fluid will have the appearance of pus. The application of acetic acid will, however, always differentiate them from pus cells. Pus and ovarian cells could exist in the same fluid, but in cases where the pus cells became in excess the ovarian gradually disappeared. A blow on the abdomen over the ovary has caused an inflammatory process which resulted in an ovarian abscess. Dr. W. L. Attee had always drained after serious operations, but in his day tubes had not been introduced; he had used tents.

J. M. BALDY,
Secretary.

MR. LAWSON TAIT has accepted the position of Professor in Queen's College. The medical public is to be congratulated on the prospect of having the observations and *modus operandi* of this distinguished surgeon set forth systematically in public lectures and demonstrations, as it is well known that the number of foreign physicians desiring to hear Mr. Tait, and to see him operate, in private, had become a serious burden on his leisure and his patience.

Dr. AUVARD, formerly in charge of the obstetric department of the "Bulletin de Therapeutique," has become the editor of the well-known and valuable journal "Archives de Tocologie." A communication from him will appear in the March number of the ANNALS.

THE plates of this number are by a new process, hitherto unused for illustration of medical subjects.

EDITORIAL.

IN connection with the subject of extra-uterine pregnancy, a review of the means at our command for an accurate diagnosis seems opportune. Until recently this was considered almost impossible until either the fœtus had reached the age of three or four months, or until the sac had ruptured. Now, however, that the safe and simple treatment by electricity has been introduced, and its efficacy repeatedly demonstrated, the question has become the subject of general attention, and the *early* symptoms are the subjects of particular interest to every general practitioner.

Some cases do occur where women, apparently in good health, with no suspicion of pregnancy, are struck down with a sudden and fatal internal hæmorrhage; but these cases are very rare.

Almost always symptoms have preceded such an accident which might and should have led to a diagnosis.

These are, *first*, cessation of menstruation for one and usually two periods, for rupture seldom occurs before the eighth week, usually about the tenth.

With the cessation of menstruation occur the other customary symptoms of pregnancy. In this connection it is well to raise the question whether it ought not to be the rule or custom for physicians to make a vaginal examination at about the eighth week, when women come for advice or an opinion concerning the existence of pregnancy.

It is the easiest way to settle the latter question, and most women readily consent to an examination at that time. If this were usually done, many cases of extra-uterine pregnancy would be discovered early, just as many cases of albuminuria are detected in good season by the careful physician who makes it a rule to examine the urine of all his pregnant patients.

Second. The first symptom which attracts the attention of the patient, and makes her think that something is wrong, is pain, — severe, unusual, long-continued, neither cramps, nor colic, nor “ovarian.” This strange, sharp, unaccustomed pain leads the woman to seek medical advice. These pains, caused by stretching or tearing of the sac, or its covering of peritoneum, or by bursting of some small vessel followed by local peritonitis, are usually repeated several times before the catastrophe of a serious rupture occurs.

Third. The next and most confusing symptom is that the catamenia sometimes returns, or is replaced by irregular hæmorrhages, which make both the woman and her physician doubt the existence of pregnancy, or, especially in connection with the next sign, they are supposed to indicate a miscarriage.

Fourth. With the hæmorrhage, if such occurs, there may be a discharge of one or more pieces of membrane. This is owing to the fact that a decidual lining forms all over the uterus in cases of tubal or interstitial pregnancy. It is not distinguishable, even with the microscope, from the decidua of normal pregnancy. This is a very important symptom, especially in connection with the preceding. It is not to be forgotten, however, that similar pieces of membrane may be passed in membranous dysmenorrhæa; but, in the latter case, there is usually a history of similar formations of membrane on previous occasions, while the history and other signs of pregnancy are wanting. The microscopic appearances of the decidual membrane are sufficiently characteristic. Above, a layer crowded with large decidual cells; in the middle, a layer containing great numbers of hypertrophied glands, many of them so dilated as to make the microscopic section seem like a network; below, the ragged layer which has separated from the wall of the uterus, containing the ends of the glands and a more compact stroma of smaller cells, and some connective tissue.

On physical examination the uterus is found enlarged, just as in normal pregnancy, in cases of interstitial pregnancy. In tubal and tubo-ovarian gestation, however, the enlargement of the uterus is not so certain, although usual. In general, however, in nearly all cases the uterus enlarges during the first two months, precisely as in normal pregnancy.

The general appearance of the vaginal portion of the cervix, the swelling, hyperæmia, and softness of the whole uterus, the patulous condition of the external os, all correspond to normal pregnancy. The uterus is usually found pushed to one side or the other in the early months, and behind it, or in the region of the tube, will be found a swelling, tense, tender, usually movable until the occurrence of inflammatory symptoms. There may be hæmatocele at a later period, or the results of local peritonitis obscuring the diagnosis. In interstitial pregnancy, by careful bimanual examination the irregular form of the uterus, as seen in the plates published in this journal, can be distinguished.

At a later period the uterus is pushed aside still more, and symptoms come on similar to those of a retroverted gravid uterus, pressure on rectum and bladder, pain, etc.

The diagnosis is to be made by a careful balancing of the various symptoms, neither excluding pregnancy because apparently menstruation has occurred, nor pronouncing that an abortion has taken place merely because some membranes have passed away, nor being satisfied with a diagnosis of hæmatocele in presence of symptoms indicating pregnancy. An amount of probability which might not warrant a laparotomy will abundantly warrant and indicate the use of electricity on an obscure pelvic tumor, with symptoms of pregnancy. While this is being tried, everything should quietly be put in readiness for a laparotomy at a few minutes' notice, if a rupture or hæmorrhage should require it.

PUBLISHERS' NOTICE.

THE bill which was enclosed with the last number of this journal contained an explanatory statement. At the last moment, and after the bills were all addressed, the postal authorities decided that this was of the nature of a personal communication, and therefore it had to be cut out.

This must be our apology for sending out the bills mutilated, and without the explanation, which, to avoid misunderstanding, is here set forth more at length.

Our endeavor has been to place before the whole profession of America a journal of high character, at the lowest possible cost.

Four sample numbers have been very widely distributed to all physicians who, not sending in notices to discontinue, or not refusing to receive the journal, were presumably *willing to examine the four sample copies*. No charge is, or ever was, intended for these sample copies to such as do not subscribe for the journal.

The bill sent was not meant as a demand for payment, but as a receipt for such physicians as might care to subscribe.

The ANNALS OF GYNÆCOLOGY will henceforth only be forwarded to such physicians as have sent, or may send, in their subscription. Our readers will see that it is only by avoiding all expenses of soliciting and collecting subscriptions, all commissions and bad debts, that we are able to offer a journal of this character for a dollar a year.

In the last number of the ANNALS we published the Table of Contents, and in this number appears the List of over 200 Illustrations of the valuable work, "Pathology and Therapeutics of the Diseases of Women," by Dr. Martin, of Berlin, in order that our subscribers may know more of its scope and nature. It is a book which should be in the hands of every practitioner, and we hope for a general support in our endeavor to place it before the profession at the extremely low rate at which it is offered. We will send to any subscriber to the ANNALS who requests it, for four months, sample copies of the Supplement, containing each 24 pages of the translation of Dr. Martin's book. There will be no charge for these sample copies to any one who at the end of the four months does not decide to continue to take the Supplement, and so inform us. It will be so bound that each number can easily be detached from the ANNALS, and, being paged consecutively, it will eventually form a complete work, which can be bound up by itself. The distinguished author will make such additions and changes in the statistics, etc., as may seem to him advisable during the progress of the translation.

The subscription price for the Supplement is one dollar annually.

The first 24 pages will appear with our next number.

ANNALS OF GYNÆCOLOGY,

P.O. Box 5094, Boston, Mass., U.S.A.

We are requested to publish the following announcement: The third session of the French Surgical Congress will be held from the 12th to the 17th of March, 1888, in the great amphitheatre of the Administration de l'Assistance publique, 3 avenue Victoria, Paris, under the presidency of Professor Verneuil.

The questions appointed for discussion are:—

1. On the treatment of gunshot wounds of the visceral cavities (exploration, extraction, various operations).
2. On the value of the radical treatment of hernia, as regards the permanency of the cure.
3. Chronic suppurations of the pleura and their treatment (operations of Liétevant and of Estlander); indications, contra-indications, and final results.
4. The return of neoplasms after operation; investigations of causes; prophylaxis.

Foreign surgeons are invited to participate, and may become members of the Congress by sending their names to the Secretary General, enclosing twenty francs (\$5).

All communications should be addressed to M. le Dr. S. Pozzi, Secrétaire-Général, 10 place Vendôme, à Paris.

TWELVE CASES OF RUPTURED TUBAL PREGNANCY.

BY PROF. LAWSON TAIT, F.R.C.S., BIRMINGHAM, ENGLAND.

From the "Satellite of the Annual of the Universal Medical Sciences."

IN the columns of the "British Medical Journal" I have already reported twenty-three cases of ruptured tubal pregnancy, in which I performed abdominal sections, and tied the bleeding point on account of hemorrhage, which threatened life. All of these cases recovered, with one exception, the first in which I operated. I have now to contribute a further group of twelve cases, in which there have been eleven recoveries and one death, as follows:—

CASE XXIV. — P. B—, aged 24, married. Sent to me by Dr. Price, of Dudley Port, with a letter to the effect that he thought the case he had sent was very like one which I had just recently operated upon for him, and which proved to be tubal pregnancy. She had missed nearly three months, and was suddenly attacked by violent pain. I operated upon her on Feb. 2, 1886, and found a belly full of clots and dark, purple-colored serum, with a ruptured Fallopian pregnancy of about the twelfth or thirteenth week, the fetus being found immediately alongside the placenta, *in situ*. I washed the clots freely out, and put in a drainage-tube. She made a somewhat difficult recovery, but went home on February 27th perfectly well. The diagnosis in this case had been made with perfect accuracy by Dr. Price before I saw her.

CASE XXV. — J. E—, aged 35, married eighteen years. Had suffered severe pain all her menstrual life; had one daughter very soon after marriage. She thought she had had three miscarriages six or seven years before, but had no living child. She ceased to menstruate suddenly at the end of January, 1886. She had no symp-

toms at all until the end of April, when a second attack of pain induced her to keep her bed. This pain continued for about ten days, and she had a feeling of great lassitude and exhaustion, and was noticed to be very pale. She recovered and got up, and about the middle of May another attack of a similar kind induced her to go to bed and call in Dr. Cunningham, of Oldbury. A third, and still more violent attack, occurred on the 2d of June. I saw her, diagnosed ruptured Fallopian pregnancy, operated on the 4th, and found a pregnancy of about twelfth or thirteenth week of the right Fallopian tube, and the abdomen full of clots and bloody serum. I washed it out with warm water, used a drainage-tube, and she left the hospital on July 1st quite recovered.

CASE XXVI. — C. H—, aged 32, married fourteen years; nine children. Supposed to have had a miscarriage at the end of April, 1886; never well after, but she had something like a period after an attack of violent pain in the middle of May. Since then her life was completely burdensome. She suffered intense pelvic pain, and was obliged to be most of her time in bed. On the 13th of July she had a severe attack of pain and collapse, after which I saw her, and diagnosed ruptured tubal pregnancy. I operated on the 16th, and found my diagnosis correct. The abdomen contained large quantities of clots and bloody serum. I washed it completely out with warm water, employed a drainage-tube, and she left the hospital quite well on August 2d.

CASE XXVII. — A. H—, aged 34, married; was seen by me at the out-patient department on Sept. 16, 1886. She was doubled up with pain in the lower abdomen and back, which had been going on for some months. She thought she had a miscarriage in the beginning of July. She had a great loss of blood then, which had been getting increasingly worse ever since. I found the cervix shortened and very soft, the uterus fixed and enlarged, with a cystic mass to the left of the cervix, running above it and behind it. She was so exsanguine that she seemed to be in a momentary condition of fainting, and her skin seemed to be tinged with hæmoglobin; the whole of the abdomen was extremely tender. I had no hesitation in diagnosing ruptured tubal pregnancy, the diagnosis being verified at the operation. I found no fœtus, but pieces of the placenta loose in the abdomen, and a large quantity of clots and bloody serum. She never seemed to completely rally from the operation, and died on October 2d, that is, the fifth day. I could not obtain a *post-mortem* examination.

CASE XXVIII. — G. W—, aged 44, married at twenty-two first time; had one child, which only lived seven months. She was never well after; suffered from menstrual pain. Married a second time eleven years ago; no children; menstruation always regular, profuse, and always accompanied by a great deal of pain. Eight years ago she suffered from what was called an attack of inflammation of the bowels; in bed for three months; her health has been very bad ever since. A violent attack of pain came on suddenly on Nov. 5, 1886, from which time she never left her bed, suffering intense pain, until I saw her early in January. She had not menstruated, but there had been irregular hemorrhagic discharges. She was under the care of Dr. Annie Clark, as an out-patient. The whole of the roof of the pelvis was fixed, and no diagnosis could be arrived at. I made an exploratory incision on January 26th, and found the abdomen full of clots and bloody serum, and a Fallopian pregnancy of about the third month, which I removed. I washed

her out thoroughly, put in a drainage-tube, and she went home perfectly well on February 13.

CASE XXIX. — Late on the evening of February 16th I received a telegram from Dr. Dolan, of Halifax, to proceed at once to that town to operate upon a case which he believed to be one of ruptured tubal pregnancy. The following is the account which Dr. Dolan has given me: "P. W—, aged 29, married, four children living, youngest two years old; had a miscarriage nine months ago; has always been regular, but missed the last period. Felt uneasy for the past two weeks; felt, she said, as if there were a weight, and as if the womb were coming down the passage; enjoyed good health up to this time. About 9.30 A.M., February 11th, I was called to see her, and found her in a state of collapse. She revived, and then complained of pain in the abdomen; symptoms like those of colic, vomiting, abdomen distended, great flatus. This continued for some hours; was relieved by ether and champagne. She had several attacks during the day, and I saw her altogether seven times. At 10 P.M., same night, she begged for something to give her sleep, and I gave her a dose of chloral, bromide of potash, and camphor water. She slept the whole night. A nurse had been obtained immediately after the first attack. On the morning of February 12th she was to all appearances perfectly well; was free from pain, and, as she said, she felt as if there was nothing the matter with her; there was, however, a good deal of flatus, and the abdomen was distended. She told me she had gone to bed on the Thursday night perfectly well, but on rising in the morning, about 7 A.M., she felt a sudden pain about the umbilicus. When she got up she tried to work it off. I told her husband I feared there was some internal hemorrhage caused by rupture of tube, but as she was so much better I would wait and see whether I was right. She was kept in bed in charge of the nurse, and not allowed to move. This treatment was continued until the following Thursday. There was no return of pain or collapse, and she said she did not know why she was kept in bed. At midnight I was hurriedly summoned to see her. She had been out of bed for a short time and almost the same symptoms came on, — sickness, tendency to faint, cold sweats, with a sense of fulness in the abdomen. Her appearance was changed, face was blanched, the abdomen was distended, but there was no localized swelling. By rest she again revived. I told her husband that I was now certain as to what she was suffering from, and an operation would be required. He gave me permission to call in Mr. Lawson Tait, whom I telegraphed for as soon as I could." On my arrival I completely agreed with Dr. Dolan's diagnosis, and I opened the abdomen without further delay, and removed an enormous quantity of clots, bloody serum, and *debris*. The tubal pregnancy was on the left side. I tied the broad ligament, removed the pregnancy, washed her out thoroughly, and put in a drainage-tube. Dr. Dolan stayed with her all night, feeding from time to time with diluted champagne. She gradually rallied: there was but slight discharge from the tube, very little pain, the pulse came down day by day, and on February 25th she was regarded as convalescent, and is now in a condition of perfect health.

I left Halifax that night by a train which reached Birmingham at about eight on the morning of the 18th, and in an hour had to operate upon the following case of Dr. Hoare's. This formed one of the most remarkable coincidences that has ever

occurred in my practice,—two cases of ruptured tubal pregnancy in twelve hours. In both of the cases the diagnosis was completely made by the practitioners in charge.

CASE XXX. — M. C—, aged 31, married eleven years, had two children; the eldest, six years old, was sent to me by Dr. Hoare, of Aston, with the following note: "A good deal of obscurity surrounds the early history of this case, on account of the unintentional self-deception of the patient, and the extreme reluctance she showed to confessing herself to be out of her usual state of health, a condition in which she persisted until pain and difficulty of micturition forced her to seek surgical aid to overcome the latter. The patient has had two children without anything abnormal in the confinements or sequent convalescence. Her youngest child is nearly two years old. About two months ago I was called to attend her at intervals of *malaise* and recovery till three weeks ago. She complained then of general weakness, inability to get through her household work, and prostration. I felt sure she was pregnant; but the patient herself said she was perfectly sure she was not, almost resenting the suggestion. A day or two before you saw her with me I was again called in; this time she complained of severe pain and inability to make water; the passage per rectum was free and regular; on passing a catheter only a few ounces of urine came away. On digital examination a large doughy mass was felt in the recto-vaginal sac, which ultimately proved to be a tubal pregnancy." I saw her on the morning of the Thursday, diagnosed ruptured Fallopian pregnancy with hemorrhagic effusion into the abdominal cavity. She was removed into the hospital, I operated next morning, and found the abdomen full of clots and bloody serum, and a ruptured pregnancy, of the ninth or tenth week, of the right tube. I washed her out, put in a drainage-tube, and the patient went home perfectly well on March 7.

CASE XXXI. — P. B—, aged 29, married. When visiting at Monmouth, I saw this patient in consultation with Dr. Prosper. He told me that she had been admitted to the Monmouth Hospital with severe pelvic symptoms. She had been ill for some weeks. I made an examination at Dr. Prosper's request, and said I was perfectly certain it was a case of diseased tube; when I said that, he proposed she should be sent to Birmingham for operative treatment. She was so removed on April 27. After having quite satisfied myself that it was a case of ruptured tubal pregnancy, I operated and removed it. At least two ruptures had taken place, because there were layers of clots of two different dates, the first being quite bright and of recent origin. She recovered, and returned quite well on May 2.

CASE XXXII. — A. E—, aged 30, married eighteen months, sent to me by Dr. Gordon, of Walsall; never pregnant; had not missed any periods, her last period having occurred at the end of April. She was sent to me with a note to the effect that "she had been confined to bed with pelvic troubles for about three months." These symptoms increased in severity, until Dr. Gordon advised that she should be placed under my care for an operation, if necessary. I examined, and found a cyst on the right side of the uterus, extremely tender to touch, and the whole of the abdomen distended and tender, with threatening, if not already advanced, peritonitis. I admitted her to hospital, opened her abdomen on May 6th, and found a tubal pregnancy on the right side; but the whole thing was so infiltrated with clots and rotten that nothing could be identified, except the stump of

the broad ligament, to which the disintegrating masses of the remnants of the Fallopian tubes were attached. I washed her out and drained, and she left the hospital quite well on May 28th.

CASE XXXIII. — G. S—, aged 44, married, was seen by me in consultation with Mr. Lafarelle, of Coleshill, in July. Her youngest child was nine years old. She menstruated quite regularly until the last two or three years; her last period was in May; it then stopped for eight weeks and returned suddenly with severe pain, from which pain she had never been free until I saw her in consultation in July. The condition she had been suffering from we both regarded as local peritonitis, the chief trouble being over the transverse colon. There was an increased night temperature, and distention of colon, with sickness, which gave us both the impression that she was suffering from chronic colitis. I made a pelvic examination without discovering anything. She remained in a condition of invalidism until the last week in August, when Mr. Lafarelle discovered a pelvic tumor. He then asked me to see her, as it seemed to grow very rapidly. I saw her on September 15th, and found a large mass not well defined, and yet clearly pediculated to the left side of the uterus. She was very exsanguine, abdomen greatly distended, and I hazarded an opinion that it was a rapidly-growing ovarian tumor, which had become rotated and gangrenous. I admitted her to my private hospital, and operated on the 17th, when, to my surprise, I found she had a ruptured tubal pregnancy, in which I found a fœtus of about the tenth week, which had been clearly dead for several weeks. The abdomen contained large quantities of clots and bloody serum of a much earlier date. I washed her out, used a drainage-tube; she made an uninterrupted recovery, and went home on October 14th.

CASE XXXIV. — G. F—, aged 28, married eleven years, had four children, youngest five years old; periods ceased for twelve weeks about Whitsuntide, then she had severe flooding for eight weeks, the last of the discharge having been seen about the beginning of September. She was extremely anæmic, everything in the pelvis was fixed, the abdomen was much distended, and she looked very ill. I saw her on September 19th, and diagnosed a ruptured tubal pregnancy. I opened the abdomen next day, found large quantities of clots and bloody serum in it, and removed a ruptured tubal pregnancy of the right side. She made an uninterrupted recovery, and left the hospital on October 5th, quite well.

CASE XXXV. — — B—, aged —, married. On September 28th I got a letter from Dr. Williams, of Wrexham, asking me to go to that town to see a patient with him, who was supposed to have had a miscarriage in the summer, and she had looked upon herself as again pregnant, having had something like a period about the end of July. A fortnight before Dr. Williams sent for me she thought she had another miscarriage. "She had some sanguineous discharge, accompanied with uterine expulsive pains. This continued, with occasional subsidence of the pains, but not for long, they having appeared like strong labor-pains; to-day they have been very severe, and this afternoon she parted with a large quantity of water, which the nurse considered to be the liquor amnii, but it gave no relief. There is some tenderness of the uterus and peritoneum generally. She is very anæmic and prostrate, and able to take but little nourishment. Her temperature is not much disturbed, and her pulse is feeble, ranges from 80 to 100." I saw the

patient next day, and found the roof of the pelvis fixed, and an ill-defined feeling of bogginess all over the abdomen. But the patient was so tender that an examination was impossible, and her condition of anæmia was so serious that I did not feel justified in pressing the employment of an anæsthetic, unless I might at the same time operate. I gave the opinion that there was nothing in the uterus, and I doubted very much the belief that the patient had concerning her miscarriage. I hazarded an opinion of ruptured tubal pregnancy, but felt by no means quite sure of it; but, considering that the patient was extremely ill, I urged an exploratory operation without delay. This was at once assented to by Drs. Edward and Llewelyn Williams, and by the husband of the patient, so that I returned to Wrexham next morning and found my patient much worse, far more exsanguine. I opened the abdomen at once, and found it full of clots and bloody serum, several pints of which I removed. The source of the hemorrhage I found to be a tube distended by an ovum, and ruptured. I removed it with much difficulty, and tied the stump. The patient has made a tedious, but quite satisfactory, recovery.

Concerning these cases I have first of all to say that they complete a series of thirty-five operations, performed every one of them under conditions of the utmost gravity, where life was threatened, and I have no hesitation at all in saying that thirty-two or thirty-three, if not all thirty-five, of these lives would have been sacrificed but for prompt interference. Of the thirty-five only two have succumbed. One, as I have already said, the first on which I operated, because I knew not what to do. I was too long over the operation, I fiddled about securing the bleeding-points as they arose, instead of doing, as I always do now, separating all adhesions regardless of the bleeding-points, until I get as rapidly as I could down to the base of the tumor, which is the broad ligament. A ligature placed round that, and secured, at once arrests hemorrhage; not a drop was ever lost after that. The other case who died, number four, the hemorrhage had already progressed too far, the patient was almost dead at the time I operated. She made a great struggle to get through, and lived five days, and then succumbed. I almost wish in this case I had tried transfusion; but I have no great belief in the efficacy of that proceeding, and, therefore, did not do it. I think now I have cause to regret, perhaps, not having made the effort.

All the points of my previous papers on this subject are confirmed by the facts of these twelve cases. The diagnosis is not always possible, but it may be made correctly in probably eighty-five per cent. of the cases. The real clue to the nature of the case is a history of sterility for some considerable time, the arrest of menstruation for weeks or even months, a sudden access of pain and collapse, with repetitions of these attacks, as graphically described by Dr. Dolan in his communication concerning his own case. The operation is simplicity itself. Open the abdomen, go at once to the seat of the rupture, that is, the broad ligament, and tie it, for, until you come to absolutely the ligament itself, the tissue is so rotten and friable that no attempt to arrest hemorrhage in any other way can succeed. Then clear out the *débris*, put in a drainage-tube. Of course, amputation of the ligatured mass is a matter of necessity: no one would ever dream of leaving such a thing to putrify in the abdomen.

Mr. J. E. Burton, of Liverpool, seems to have some method of his own, by

which he could leave a woman, as he says, in a clean condition surgically, and yet leave a mass of disintegrating organs infiltrated throughout with blood-clots to rot in the abdomen, and if this mass is removed he calls it a mutilation. Technically, it is a mutilation in the sense that a woman rises from her sick-bed with one Fallopian tube and probably one ovary, where formerly she had two; but it cannot be imagined that these organs after the operation could ever resume their functions, and they certainly could not maintain any active life after the broad ligament was tied. To talk, therefore, of its being a mutilation, an operation that can be dispensed with, or an operation that can be successfully accomplished in other ways, can only be the utterances of a man who has had no experience on the subject at all. It may be, however, that Mr. J. E. Burton has had revealed to him by some special interposition of Divine Providence a new method of abdominal surgery which has been denied to me. If this is so, I call upon him to declare it.

Speaking of the treatment of these cases one is obliged to allude to the scheme by which it is proposed to destroy the life of the fœtus, and to arrest the growth of the ovum. All I can say is that I am never called in to these cases until the discussion of a proposal of that kind is too late, for being engaged exclusively in special practice I have no opportunity of seeing these cases, and never have seen them until the period of rupture. We have then no concern with the fœtus at all, we have to deal with bleeding from the placental structure, and from the maternal sinuses in connection with it. An electrolytic needle under such circumstances would have no more effect than a pinch of snuff. In one of the preparations now laid before you we have abundant evidence of the fœtus having been dead for weeks, and yet hemorrhage had been going on. The probability is that that fœtus had been dead for ten weeks before the operation was performed, and yet bleeding had been going on on the morning of the operation. If the cases were seen and diagnosed, as I have already publicly expressed my doubt that they could be before the period of rupture, the introduction of an electrolytic needle, if it happened to pierce the body of the fœtus, might kill it; but would it kill the placenta, which, as we know in the majority of instances, appears to go on growing when the fœtus is dead? There can be no question that in these cases it goes on growing after the fœtus is dead. But, whether this be the case or not, the propriety of destroying the child before the period of rupture, if its presence in the abnormal position can be recognized, I leave to the discussion of the physicians who see these cases before the period of rupture. When the period of rupture, however, has been reached, and hemorrhage is going on, there is nothing, so far as I can see, but for us to follow the surgical rule to cut down and tie the bleeding-point.

That I should be able to produce within the short period of seven years thirty-five cases of this condition, treated by operation, confirms completely the statement of Dr. Blundell, that it is by no means uncommon. That it has been, when left alone, almost uniformly fatal is a view which he strongly maintains, and which all evidence confirms. In fact there is a paragraph in Dr. Blundell's writings which sums up all that was known, and all that is known now, save in the matter of operative details, concerning the frequency and cause of this peculiar displacement. "I have never seen any cases of tubular pregnancy in which the tube was of great size. More generally this canal enlarges to about the size of a small fist, sometimes to the size

of a pullet's egg only; and in the early part of gestation (say in the second or third month) this cyst bursting open, the child escapes into the peritoneal sac, and the woman suddenly perishes by an internal hemorrhage. Many women, I have little doubt, die in this way; but, being buried without examination, the real cause of their death is never ascertained. Three or four tubal gestations of this kind have taken place within the circle of my own obstetric acquaintance: whence I infer that the disease is by no means rare."

Thanks to the progressive emancipation of the professional mind from the thralldom of authority, within the last ten years, we have now the means, if we have a reasonable time in which to act, to save at least the great majority of these cases.

As I have already said in a communication to the Pathological Society, I do not think it possible to overestimate the value of the recent contribution of Dr. Berry Hart and Mr. J. T. Certer, on the results of the examination of frozen sections of two cadavera, in which advanced uterine gestation was observed.

The views which I advanced concerning the pathology of extra-uterine pregnancy, so long ago as 1873, have been entirely confirmed by facts that I have since seen in the operative details of this condition. But the misfortune of the operation is that it is witnessed by few people, and in such cases as those in which the operation is performed at the time of early rupture, the details are not perceptible to any one except the operator. It became, therefore, a matter of the utmost difficulty to persuade my professional brethren of the accuracy of my views, and, except that they were always alluded to in writings on the subject, seemed to make very little impression. Dr. Berry Hart's observations have completely proved the accuracy of the views which I had about this peculiar displacement.

Briefly stated, what I regard as the true pathology of extra-uterine pregnancy is as follows:—

In the first place, one or both, generally both, of the Fallopian tubes are so damaged by the inflammatory change—desquamative salpingitis—that the procreative machinery is put out of gear. My belief is that the chief function of the cilia of the Fallopian tubes is to prevent the access of spermatozoa, and that, therefore, impregnation takes place in the tube only when deprived of their cilia. Adhesion of the impregnated ovum then takes place to the wall of the tube instead of the wall of the uterus, and then the ovum develops until the tube can no longer expand. Between the tenth and thirteenth week the tube gives way, and upon the position of the point at which the rupture takes place depends the variety of extra-uterine pregnancy which is developed. By far the most common seat of rupture is out through the surface of the tube into the cavity of the peritoneum. Because the proportion of the circumference of the tube which is covered by peritoneum is very much greater than the proportion of the circumference of the tube which is related to what is called the cavity of the broad ligament. This rupture into the peritoneum, so far as we can tell, is fatal in an enormous number of instances; what the proportion is we cannot say, but it looks to me as if it were ninety or ninety-five per cent. Enormous sinuses are developed in the tube, and in the mass of the placenta these are torn, they bleed, the hemorrhage is recurrent, and the patients die of hemorrhage into the cavity of the peritoneum, forming the variety of the intro-peritoneal hæmatocele, or they die later on of purulent peritonitis.

No doubt some of the cases must end in the death of the ovum, without much hemorrhage, and become absorbed; but it is perfectly clear that in these cases the tube will remain functionally useless, because it has been sealed probably at both ends by inflammatory disturbance, and, therefore, will be a perfectly useless organ. So far as we know, in the whole realm of surgical literature there is only one case in which there is the least evidence of what may be called an abdominal pregnancy going to the full time, that being Mr. Jessop's case; and even that is open to the view that it would have been one of the other variety, in which the walls of the ovum cavity and the posterior layer of the broad ligament ruptured just at the last moment, and the child was found in the cavity of the abdomen. At any rate, except in his case, there is no evidence at all of any case in which the ovum has been, or the child has been, developed inside the peritoneal cavity. In fact, considering the harmoniously active digestive powers of the peritoneum, the likelihood of the occurrence of such an incident would be very small.

The second form of rupture, into the cavity of the broad ligament, on the contrary, forms a condition which is, so far as I know, never fatal, or only rarely so, one instance alone having been placed on record in which death has taken place from the hemorrhage. In that case the fatal issue was, doubtless, due to the rupture of the cyst into the cavity of the peritoneum, so that really the exception is an example of the rule being proved. Doubtless in many of the cases of this variety the ovum dies at once, or is absorbed like an ordinary broad ligament hæmatocele. But in other cases the ovum does not die, but goes on developing to the full time; death, however, occasionally interfering with the progress of the pregnancy at the fourth, fifth, or sixth month. Then we have the group of cases in which, after suppuration has taken place, the bones of the fœtus are discharged through the rectum, through the bladder, or through Douglas' *cul-de-sac* into the vagina. Many instances of this have occurred in my practice, as also have cases in which a lithopædion is the result. Such a lithopædion probably would have resulted in Dr. Berry Hart's first case.

The minority of the minority proceed to the full time, and are removed either as living or as dead children. Examples of both I have published at the full time. They are removed from a cavity which Dr. Berry Hart proves completely to be extra-peritoneal.

This last view was what I based all my conclusions upon, that these full-time extra-uterine pregnancies were entirely extra-peritoneal, the only place in which they could be was the cavity of the broad ligament, and, therefore, I concluded that they were due to a rupture from the Fallopian tube into the cavity of this structure. Dr. Berry Hart's two preparations absolutely establish the justice of this conclusion.

One remarkable thing about Dr. Berry Hart's section is worthy of notice, because it explains completely the only difficulty which I found in the whole thing. That is, that while the peritoneum is lifted right off the pelvis, all round the organs contained in it in every direction but one, it is not lifted from the anterior surface of the uterus. We have, therefore, a prolongation, like the finger of a glove, of peritoneum curving down in front of the tumor, although reaching as far as the fundus of the uterus into the base of the bladder; on either side of this it is com-

pletely lifted. This explains what puzzled me greatly in two instances of my operations, that opening in the middle line I had to close the cavity of the peritoneum after having passed through both its anterior and posterior layers.

These observations of Dr. Berry Hart, as I have already said, completely establish my view of the pathology of extra-uterine pregnancy, and these views of themselves enormously simplify at once the pathology and surgery of the condition.

TUBAL PREGNANCY.

From the Catalogue of the Pathological Museum of Harvard University.

PLATE V. —The uterus measured three inches and one-fourth in length, and was changed in structure as is usual in gestation; inner surface softened, but without any well-marked decidua. The outer half of the right fallopian tube was enlarged to about the size of the last joint of the thumb, and, having been cut open, the membranes of the ovum are shown with a well-developed fœtus three-fourths of an inch in length.

The lady from whom this specimen was taken was a patient of Dr. John D. Fisher, 18 years of age, and had been married only ten weeks. The catamenia appeared on the day of her marriage; at the end of three weeks it appeared again, as she thought, and in two weeks more it appeared for the third time; discharge unusually profuse, of a bright-red color, and continued for a week without much intermission. After the last period it frequently recurred, and, on any considerable exertion, became so profuse as to cause faintness. On the morning of the last day she was unusually cheerful, and had been exercising freely, so as to become somewhat fatigued.

At 11 o'clock A.M. profuse flooding came on, and she became excessively faint; at 1 o'clock Dr. F. found her with symptoms of complete collapse as from hæmorrhage; under the use of stimulants she revived somewhat, but remained in a fluctuating state until 9 in the evening, when reaction became pretty fully established; soon after this she fell asleep and slept until about half-past 3, when she awoke quite faint, and so continued until 7 in the morning, when she died, twenty hours from the time of the attack. There had been slight pain with tenderness just above the right groin, a sense of fulness in the abdomen, and an unusual degree of fulness over the lower part, on examination by the hand.

On dissection there were found three quarts or more of blood in the peritoneal cavity, the right fallopian tube having ruptured at the point which is marked in the preparation by a reddish-brown coagulum. In several other cases of tubal pregnancy which have occurred in this city

there has been observed a tendency to hæmorrhage, as in the above case, though not to the same degree, the patients generally regarding the discharge as an irregular flow of catamenia, and as an evidence that pregnancy did not exist.

Dr. J. B. S. Jackson. No. 711.

PLATE VI. — The uterus measures $3\frac{3}{4}$ inches by $2\frac{3}{4}$ inches, and in thickness $\frac{3}{4}$ of an inch. Decidua strongly marked. The ovum is in the right tube, measured 2 inches by $1\frac{1}{4}$ inches, and the fœtus is plainly seen, about as large as at two and a half to three months. The tube is extensively lacerated, but the fimbriated extremity, through which the membranes protrude, is not involved. Both ovaries were very carefully examined, but no corpus luteum was found. The peritoneal cavity was, as usual, filled with blood.

The case occurred at the State Almshouse at Monson. An Irish-woman, aged 25 years, had passed two menstrual periods, and on the 1st of February, 1887, complained of constipation and pain through the pelvis during defecation.

This she had for four or five weeks, but was otherwise quite well. On the morning of the 13th she had a very severe attack of pain after a dejection, and this continued; but at 2 P.M., having got relief, she arose, dressed herself, and went downstairs. There she became faint, and vomited, and the pain returned with increased severity and symptoms of collapse. She rested quietly, however, through the night, but the next morning fainted on going to stool, and died at 10 A.M.

Dr. S. D. Brooks, Supt. of the Almshouse at Monson. No. 2909.

PLATE VII. — No history of the specimen has been obtained, except that death occurred from rupture of the cyst. The embryo was found in the abdominal cavity.

In the region of the right fallopian tube, $4\frac{1}{2}$ cm. distant from the ovary, is an ovoid swelling 7×5 cm. The wall of the tumor is covered with a thin membrane; the substance of the wall appears, in great measure, to be composed of clotted blood. The interior of the sac was covered by a smooth, thin membrane from one portion of which hangs a small cord apparently composed of vessels; these pass into a slightly raised honey-combed looking expansion of tissue which lies beneath the above-mentioned membrane and is closely adherent to the wall of the sac.

This has a diameter of about 3 cm., and is the placenta. Numerous small round fibres (vessels?) pass from the membrane into the walls of the sac. Ovary on right side not surely found.

Case of Dr. A. R. Holmes, of Canton, Mass. No. 703.

INTERSTITIAL PREGNANCY.

PLATE VIII. — Healthy woman; aged 26. In April, 1873, became pregnant. Pain which she had had in right iliac region for two years continued, and there was a menstrual show in April and May. June 15 Dr. Davison found her with excruciating pain in uterus, os not dilated; relieved for a time by opiates; collapse and death in twenty-seven hours from attack. Specimen examined and described by Dr. R. H. Fitz, with two figures, in "American Journal Medical Sciences," for January, 1875. The uterus generally was considerably enlarged; but a most striking feature of the external appearance was a very great prominence of the fundus upon the left side and a jagged opening there, with thin edges, nearly half-inch in diameter, through which the fœtus was seen. Through this opening a very copious hæmorrhage had occurred into the peritoneal cavity.

Left fallopian tube very much higher than right. Corpus luteum in left ovary. Ovum two and a half inches long; fœtus as at ten weeks, uterine wall about it being less than two lines thick.

Left fallopian tube open from its free extremity to the fœtal sac, and to the extent of an inch from its uterine extremity, the intermediate portion being reduced to an impervious cord; inner surface very much swollen, pale and soft. No decidua in fœtal sac nor fallopian tube.

Dr. F. refers to other published cases, remarks upon this one, and upon the anomaly in general, and raises the question whether the present case may not have been one of impregnation in a rudimentary horn of the uterus.

Case of Dr. A. T. Davison, South Boston. No. 4299.

ANATOMY OF THE CELLULAR TISSUE OF THE PELVIS.

From "Diseases of the Fallopian Tubes, the Ligaments, the Peritoneum, and Cellular Tissue of the Pelvis."

BY PROF. L. BANDL, VIENNA.

[Translation.]

THE first one who succeeded in demonstrating the universal loose cellular tissue of the body was Bichat. He injected air and water into the cellular tissue, and from the results pointed out that the communicating fissures of the connective tissue must also furnish a means of dissemination for all pathological exudations. After him Henke, König, and W. Schlesinger made similar observations.

By injecting water into the arteries of a cadaver Henke has shown, in a beautiful manner, that the vascular system is in a so-to-speak open

connection with the fissures of the strata of loose cellular tissue. In this way he demonstrated the extension of the connective tissue of the neck and the strata of cellular tissue in the pelvis as well as in the peritoneal cavity.

The investigations of König and of Schlesinger are of importance to our subject, for they made a special study of the cellular tissue of the female pelvis. We consider it very important to quote the results of both observers, because the nature and the manner of effusions of blood and pus in the female pelvis were made clear by the results of these researches, and because some information has been obtained about the inflammatory processes in the subperitoneal connective tissue, which are so often observed and which so stealthily advance, and also because each investigator selected a different class of subjects for his investigations.

König used for his researches the cadavers of women who had died a short time after delivery, of some disease which was not puerperal, and he employed air or water for injection under the peritoneum. He gives the results of his investigations in the following terms:—

1. "I injected through a canula inserted in front of the ovary at the highest part of the broad ligament so that the connective tissue lying next to the highest part of the boundaries of the pelvic basin was first filled. The fluid did not then descend and permeate the strata of connective tissue lying in the pelvic basin, but it went upwards into the tissue of the iliac fossa, lifting off the peritoneum. It immediately followed the course of the psoas, and, following the concavity of the ilium, spread out only a little sideways. The chief part then lifted off the peritoneum at Poupart's ligament, mostly at its outer border, and forced it upwards. Then only after detaching and elevating the peritoneum on strong pressure did it go from here into the depths of the pelvic basin. This separation of the peritoneum from Poupart's ligament occurs with an injection force of a few ounces, to such an extent that a needle thrust through the abdominal walls one and a half fingers' breadth above this ligament will not injure the peritoneum itself.

2. "When the injection is made under the base of the broad ligament more sideways into the depths of the pelvis and forwards into the region of the junction of the body of the uterus with the cervix, it fills first of all the deep connective tissue on the sides, then it lifts away the peritoneum from the anterior portion of the cervix uteri itself; and the separation advances from there to the corresponding tissues lying near the bladder, until the injection, after going deep under the border of the pelvic basin, passes over and arrives at the inguinal ring with the round ligament. Only when it has reached this point does the fluid raise up the peritoneum

along Poupart's ligament, and then it follows the path that has been described to the iliac fossa.

3. "An injection on the posterior base of the broad ligaments in Douglas' cul-de-sac first fills the corresponding portion on the sides and then follows the path described under (1)."

Supported by these researches, as well as by clinical observation, he suggested the following propositions concerning the development of the exudate:—

1. "An exudate which develops in the connective tissue of the broad ligament close to the fallopian tube and ovary extends primarily towards the course of the psoas and iliacus muscles, and only then descends into the pelvic basin.

2. "The exudate which primarily develops anteriorly and laterally in the deep connective tissue of the region of the uterus connecting the body and the cervix, first distends the cellular tissue of the pelvic basin by the side of the deeper portions of the uterus and bladder, and then goes mostly with the round ligaments under the inguinal ring towards Poupart's ligament. Thence it goes into the iliac fossa outwards and backwards.

3. "Those abscesses developing at the base of the broad ligaments posteriorly first distend the posterior lateral portions of the pelvis (Douglas' cul-de-sac), and then they follow the path described under (1).

4. "In the later stages of development this is compensated for, because the above-mentioned portions of the peritoneum are equally lifted away.

5. "In the descent of pus towards Poupart's ligament, the peritoneum is so much separated from the ligament by the presence of a small amount of fluid that a needle thrust about one and a half fingers' breadth above it penetrates the epigastrium outside of the peritoneum."

W. Schlesinger did not employ for his investigations the bodies of women who died in child-bed or a short time after it, or who had not entirely completed a puerperal period. For injection-mass he used boiled and filtered gelatine, which sometimes had mingled in suspension a coloring substance, and which was injected with a measurable force. The results of the studies of numerous cadavers W. Schlesinger has compiled as follows:—

1. "If an injection is made through a canula inserted and tied into the anterior surface of the lateral segment of the fimbriated uterine ligament, the injection-mass spreads out from between the folds of the fimbriated extremity, and indeed especially towards the abdominal end of the tube, so that at times the fimbriae themselves swell up in rows of several lines in thickness. Then the injection forces farther apart, laterally, the surfaces of the broad ligament, so that it can immediately advance to the linea

terminalis, or maybe to the vessels; and generally this happens before the swelling produced by the infiltration of the broad ligament has yet assumed visible proportions. From this place, where the reduplication of peritoneum from the broad ligament extends to the iliac fossa, the farther advance is as follows:—

“A part of the injection-mass lying over the psoas moves forward in an oblique direction, and always indeed outwards from the round ligament and along the same in the direction towards the lateral half of Poupart's ligament, so that the infiltration lying in the iliac fossa is now bounded forwards and inwards by the round ligament which has been lifted away. Another part of the injected fluid, as soon as it has crossed over the vessels, immediately spreads around the intestines lying in the iliac fossa; on the right side infiltrating the cellular tissue about the cœcum, and on the left side penetrating the short piece of mesentery which commences at the sigmoid flexure, in order that it can extend from here farther upwards along the ascending or the descending colon, and indeed mostly exterior to these parts of the intestine. The direction in which the injection fluid shall advance in greater or less quantity, in any given case, seems to depend on individual circumstances, on the varying amount of space in the bony pelvis, or on the different situation of the cœcum to the iliac fossa, etc. For sometimes, and indeed in the majority of cases, the injection fluid extends only forwards along the above-described paths towards Poupart's ligament; while the cellular tissue in the neighborhood of the intestines, particularly in the posterior part of the iliac fossa, is infiltrated with only a small amount of injected fluid. At other times the injection at once forces its way in great quantity upwards towards the kidney, while it goes only gradually forwards to the iliac fossa. Of course this occurs only in the first steps of the experiment, while only small quantities of injection fluid are employed. As the injection is continued this is compensated more or less, as is self-evident, because then the tumor lying in the pelvis, and originating between the separated surfaces of the broad ligament and where the peritoneum is lifted away from the sides of the pelvis, is gradually growing larger.

2. “An injection by the side of the cervix at its junction with the body of the uterus through a canula introduced into the posterior surface of the broad ligament infiltrates immediately the cellular tissue in the depths of the pelvis which lies at the base of the broad ligament, that is to say, laterally and posteriorly. The first visible effect of an injection is a pouching of the under part of the posterior surface of the broad ligament, and finally of Douglas' reduplication, on that side on which the injection is made. If the mouth of the canula is thrust deep down to-

ward the floor of the pelvis, then the above-mentioned pouching of the posterior surface of the broad ligament temporarily ceases, while the injected gelatine immediately forces itself in great quantity into the connective tissue of the floor of the pelvis, and eventually into the meso-rectum or the peritoneum of the posterior wall of the pelvis. In all cases, however, a considerable amount of injected gelatine collects between the surfaces of the broad ligament, and indeed in such a way that the posterior surface pouches out especially, and the peritoneum of the corresponding place on the side of the pelvis is lifted off. Now the injection always crosses over the vessels here in order to enter the iliac fossa, and to take the path which was described, under (1), for the advance of the injected fluid to the iliac fossa. The tumor which is found in the pelvic basin at that stage of the experiment when the injected gelatine begins to cross over to the iliac fossa is naturally more marked at the completion of the injection, than earlier at the supposed centre of the infiltration at the top of the broad ligament. But this injection always crosses over the linea innominata in these cases at the time when the infiltration of the cellular tissue in the anterior part of the pelvis has not yet produced a visible swelling. The tumor which corresponds to the pouching of that part of the anterior surface of the broad ligament which lies under the round ligament has, for example, not yet reached the level of the inlet of the pelvis, and between its anterior convexity and the anterior lateral wall of the pelvis there is still unfilled a space two or three fingers broad; while the injection advancing to the iliac fossa along the sacro-iliac symphysis, or somewhat forward of this, has already infiltrated the anterior and external border of the cœcum, or has forced its way farther upwards along the vertebral column toward the kidneys.

“This path of diffusion upwards and backwards comes much more essentially into consideration at the starting-point of the infiltration as discussed here, and especially it will be more frequently observed than the movement forwards in the direction towards Poupart’s ligament, which has been already described, but which, however, especially in the later stages of the injection, will seldom be found absent.

3. “When an injection is made through a canula inserted into the anterior surface of the broad ligament by the side of the cervix at its junction with the body of the uterus, the injection-fluid advances at once, as soon as the immediate surroundings of the site of the injection have become infiltrated, to the posterior wall of the bladder, pushes its way between this and the uterus, and not seldom passes very quickly over the median line.

“Then the injection-mass forces its way at once along the round

ligament of that side to which the canula is secured and forwards of the same in the direction of the point of insertion of the ligament in the inguinal canal, while another part of the fluid, gradually infiltrating the tissues of the broad ligament, raises the peritoneum of the lateral wall of the pelvis away from the round ligament.

“ Although the swelling in the anterior lateral pelvic space is very often quite considerable, and the injected gelatine in the round ligament also very soon gets into the neighborhood of Poupart's ligament, yet the peritoneum at this place is now only very slightly lifted away by this mass of gelatine which has been mentioned. This injection does not generally pass over the rim of the pelvis first, but rather that infiltration which corresponds to the posterior surface of the broad ligament, and especially the lifting of the peritoneum away from the lateral wall of the pelvis behind the round ligament, and in all cases the amount of the injection-mass which passes by the latter paths to the iliac fossa is much greater than that which leaves the pelvic basin in the neighborhood of Poupart's ligament.

“ Even in one case in which, after solidification of the gelatine, the posterior wall of the pelvis was also found already infiltrated to a considerable extent, the peritoneum had not begun to be lifted away from the median half of Poupart's ligament by the mass of gelatine having arrived here by the ligamentum teres and in front of the same, while the swelling in front of the round ligament and covering the vessels had already appeared in the iliac fossa. From the iliac fossa the farther advance of the injection-mass is by the paths already described under (1) and (2), and generally, when the injection is long continued, the gelatine which goes forward from the iliac fossa unites with that passing along the round ligament to Poupart's ligament at the place where the round ligament descends into the inguinal canal, so as to lift the peritoneum away from the abdominal wall at this point.

4. “ If an injection is made through a canula inserted into the median line in the peritoneal reduplication between the bladder and the uterus, then the injection extends chiefly transversely into the cellular tissue lying under this space. At the commencement the extension is not generally symmetrical, because the injected gelatine goes in much greater quantity to one side or the other. The first conspicuous effect is the lifting of the peritoneum away from the posterior wall of the bladder. As the injection continues, when the gelatine has reached the ligamentum teres on one side it remains bounded laterally by this, and first extends forwards along it before passing behind and under it to the corresponding place on the lateral wall of the pelvis. As the injection progresses,

however, in this case also the gelatine does not immediately cross over the pelvic inlet before the round ligament at the place where it descends into the inguinal canal, but the infiltration, which corresponds to the lifting of the peritoneum away from the lateral wall of the pelvis behind the round ligament, first goes over to the iliac fossa, as has been described under (3)."

W. Schlesinger supplemented these investigations by injection of gelatine through a canula introduced under the mucous membranes of the vaginal portion of the cervix, and thus he sought to establish the paths of extension of extra-peritoneal exudations, which have their starting-point from the cervix uteri. In this way he secured uniform results, as follows:—

1. "If an injection is made through a canula inserted laterally into the vaginal portion of the cervix up to the insertion of the vagina, a swelling is immediately formed, which sometimes pouches the vaginal vault, laterally and forwards, like a round tumor; but, at other times, it can also be recognized from above by means of a perceptibly increased resistance in the anterior lateral pelvic space, near the bladder and behind the lateral segment of its posterior wall. Then the fluid goes chiefly between the bladder and the uterus, raising up especially the peritoneum of the posterior wall of the bladder, while laterally in the middle and posterior pelvic space only the cellular tissue at the base of the broad ligament is first infiltrated, and only the lowest parts of both surfaces of the peritoneal reduplication of this are found apart.

"No conspicuous tumor, however, can be seen in the lateral pelvic space at this stage of the experiment. The infiltration, even at first, only extends to the deep layers of cellular tissues which directly cover the vagina, and it can only be distinguished by palpation, even when the extension has become considerable.

"Later, then, the fluid goes gradually upward between the surfaces of the broad ligament, extends at this point more diffusely and generally. It has not yet reached the level of the ligamentum teres, when the injection between the bladder and the uterus has already passed over into the other half of the pelvis, and begun to infiltrate the cellular tissue at the base of the corresponding broad ligament. When the injection is continued the gelatine accumulates naturally at all the places that have been mentioned, and passes over the rim of the pelvis, partly with the ligamentum teres, and to the median line of the same, in the direction towards the inguinal canal, and partly it leaves the pelvic basin farther backwards—behind the ligament.

2. "When an injection is made through a canula inserted at the

median line, along the anterior lip of the cervix uteri, at the insertion of the vagina, at the early stages of the experiment no effect of the injection can be perceived in the pelvic cavity. At times a circumscribed swelling, which is not very marked, can be distinguished by palpation per vaginam, but only in the neighborhood of the point of insertion.

“It always takes a longer time and considerable pressure for the injected gelatine to force its way through the deep cellular tissue which unites the cervix and the bladder, before the fluid becomes perceptible to sight and feeling subperitoneally also, while to be sure the peritoneum appears lifted away from the posterior wall of the bladder. From this point the injection at first extends chiefly in the transverse direction, then it infiltrates the cellular tissue at the base of the broad ligament, but generally more on one side than on the other, and it forces apart the under portions of both surfaces of this ligament.

“As the injection continues, soon the bladder is no longer seen, because it is covered, the mass of gelatine lifting away the peritoneum from it, and the uterus is forced backwards and partially also covered by the tumor, while the layers of gelatine are now already found also forced into the higher parts of the broad ligament. The farther extension of the infiltration, especially the way and manner in which it crosses over the rim of the pelvis, corresponds in general to the relations which have been observed when it primarily originates in the subserous space of the pouch between the bladder and the uterus.

“3. Through a canula which is introduced close to the os uteri between the wall of the vagina and the cervix, so that the opening of the canula lies just under the peritoneum, an injection, as has been already explained, can be accomplished only under very great pressure.

“The distribution of the injected fluid into the tissues can be determined only slightly before the solidification of the gelatine.

“At one time there is only a very slight infiltration of Douglas' cul-de-sac, and there is least of all at its point of origin on the posterior wall of the cervix; at another time the peritoneum is lifted away from the wall of the vagina itself by small traces of the gelatine, while in more favorable cases a somewhat greater swelling appears on account of the detachment of the peritoneum from the anterior wall of the rectum. The path which most of the injected fluid has taken becomes evident only when sections are made of the preparation. It is then found that the gelatine has been chiefly forced forwards between the vagina and the rectum, and that the cellular tissue behind the rectum has also been more or less extensively infiltrated.

“Since many of the results attained by injection have indeed received

corroboration from observations on the living person, there is no doubt that the spaces in the connective tissue must exert a great influence on the different kinds of inflammatory processes and their power of extension. [Bartels has lately described an acute affection of the subserous connective tissue of the pleural cavity, and pointed out the analogy of this to a peri-uterine phlegmon.] ”

ABDOMINAL SURGERY.

BY J. GREIG SMITH, M.A., F.R.S.E., SURGEON TO THE BRISTOL ROYAL INFIRMARY, ETC.

Philadelphia: P. Blakiston, Son & Co. 1887. Pp. xii., 606. Illustrated.

A Review, by L. McMurtry, M.D., Danville, Ky.

FIFTEEN years ago the abdomen was to the operative surgeon a closed cavity. With the exception of a few daring operators, known as ovariotomists, whose mortality was heavy and whose work was regarded with disfavor by the profession, surgeons steered clear of every operation involving the peritoneum. Within this brief period ovariotomy has become the most successful major operation in surgery, and every organ in the abdominal cavity has been brought fairly within the realm of conservative surgery. Pathological conditions hitherto unknown have become recognized, obscure conditions of disease have become subjects of exact knowledge, and practical results have been attained in treatment which make the surgery of the abdomen the coming glory of the healing art. To gather from isolated monographs the incomplete work already done; to estimate the value of work in progress; to reconcile the conflicting views inseparable from a new and rapidly growing branch of knowledge, and formulate a treatise thereon, — is a task both difficult and extensive. This is a work our author has undertaken, and the result of his labors is before the profession.

The book is composed of twelve sections, and its scope can be best indicated by their enumeration: —

- | | |
|---------|---|
| Section | I. Diagnosis of Abdominal Tumors. |
| “ | II. Abdominal Operation considered generally. |
| “ | III. Operations on the Ovaries, the Fallopian Tubes, and the Broad Ligaments. |
| “ | IV. Operations on the Non-Gravid Uterus. |
| “ | V. Operations on the Gravid Uterus and for Ectopic Gestation. |
| “ | VI. Operations on the Stomach. |
| “ | VII. Operations on the Intestines. |
| “ | VIII. Operations on the Kidneys. |
| “ | IX. Operations on the Liver and Gall-Bladder. |
| “ | X. Operations on the Spleen. |
| “ | XI. Operations on the Pancreas. |
| “ | XII. Unclassified Operations. |

The first section, after giving an outline of the Topographical Anatomy of the

Abdomen, furnishes forty-five pages to diagnostic methods as applied to the various organs within the abdomen and pelvis. In this, as in the sections devoted to operative work, Mr. Smith shows that to his experience in dealing with this class of affections he has joined the knowledge and experience of others engaged in the same investigations. Indeed, the bibliographical table appended to the work shows that from the current literature of all countries and all languages he has gathered everything touching abdominal surgery. Yet it is evident that his own knowledge, acquired with due regard to the operations of others, and subjected to the crucial test of personal experience, is relied upon. The entire work is thoroughgoing and original, not a compilation of the work of others. We may justly presume that he has faithfully aimed to reach the standard which he himself lays down, and which is thus stated in Section II:—

"A man who enters the abdominal cavity ought to be able to do anything, from ligation of a vessel to resection of the intestine. . . . We can rarely diagnose perfectly beforehand the state of matters inside an abdomen which we open, and we ought, therefore, to be able to treat anything which we find when we enter. Dexterity here comes from knowledge as much as from practice. To be prepared, at the appearance of any complication, to apply the best known surgical technics; to do what is wanted, and no more than is wanted; to have the manner and method of each procedure mentally laid down in clear and definite lines; and generally to perform the operation in steady, straightforward, workmanlike manner. . . . Abdominal surgery is no longer a field for legitimate and versatile experiment; certain fixed and useful laws and customs have been laid down by the dearly-bought experience of great men; the abdominal surgeon ought to begin fully equipped with such knowledge as has been gathered for him."

After a careful examination of this work, the writer is convinced that in the above quotation the author has fixed his standard, and has conscientiously worked toward it.

Before the introduction of antiseptic methods into surgical practice the surgery of the abdomen was limited to ovariectomy with severe mortality. With the elimination of septicæmia came the enlarged scope of abdominal surgery and the brilliant results of the present era. Recognizing the so-called antiseptic method, or, if preferred, the method of exalted surgical cleanliness, as the most important single contribution made to abdominal surgery since the days of McDowell, we turn at once to the author's utterances upon that subject. He declares that the surgeon must aim at perfect purity of everything which comes in contact with the peritoneum. The greatest risk of peritonitis arises from impurity of hands, sponges, instruments, etc. If thorough cleanliness is attained by the use of soap and water, with a pure atmosphere, all is well; if, however, a perfect degree of surgical cleanliness can only doubtfully or approximatively be attained in a given case, then the author believes absolute security can only be had by the use of germicidal solutions. This is a clear and practical enunciation of the principles of Lister.

The spray he pronounces, and properly so, an unimportant detail in the system of surgical cleanliness aimed at by the application of Listerian principles. Perfect cleanliness of the patient, cleanliness of the surgeon and assistants, absolute cleanliness of hands, sponges, and instruments, — these are the requisite for securing the

results made possible by the adoption of the antiseptic system. The use of germicidal solutions is determined by the surroundings of the patient and the individual requirements of cases. In view of the heated discussions now so common among eminent surgeons engaged in abdominal work, the following quotation is of interest:—

“When the spray is condemned by such men as Keith and Tait on the one hand, and upheld as beneficial by such men as Thornton and Wells on the other, we may safely conclude that, under any circumstances which may be common to all their patients, it is unimportant.”

The author inveighs against the error of attempting to *disinfect* noxious and filthy matter instead of *removing* it, or of becoming careless as to cleanliness in consequence of the use of germicidal agents.

That the technique of laparotomy has been burdened with many unnecessary details is becoming daily more apparent, and this fact is fully appreciated by the author. Some of these are illustrated in the following quotations, which are now very generally regarded by laparotomists as unessential. Relating to the oft-emphasized precaution to catheterize the patient just before operating, Mr. Smith says:—

“I think the advantages of catheterism before operation are somewhat exaggerated; I am convinced that it is unnecessary, and I never have it done. The patient may pass water before operation; if there is some abnormal condition in the bladder which prevents her being able to empty it, I would rather find this out after operation than before. We can see and feel and accurately locate an enlarged bladder if it is distended; lying flat and empty over a growth, we may unwittingly injure it.”

Again, in describing the dressing of the wound:—

“It matters very little what the dressing is, if it is unirritating and absorbent. A pad of iodoform wool, or salicylic silk, or carbolized gauze will serve the purpose admirably.”

Touching the environment of the patient, Mr. Smith effectively controverts the claim that specially-designed hospitals are necessary for the best results in the present state of surgical practice. He says:—

“At the present time it is perhaps nearly as true of abdominal as of other operations, that extra care in avoiding all matters conducive to septicism will, with surroundings such as most surgeons can command, justify their being carried out either in general hospitals or in private dwellings.”

Mr. Smith's own work is a demonstration of the correctness of this statement. At the Bristol Royal Infirmary, a building one hundred years old, his abdominal operations are done in the general operating theatre.

“No restrictions whatever are placed on visitors. The room may be half-full of students straight from the dissecting room, or even post-mortem room; my assistant is the house surgeon, who will have dressed a good many wounds before coming to me, and, by a curious arrangement, the anæsthetist is also the pathologist. Thus I operate with full Listerian precautions. Operating under these circumstances, I have had some fifty ovariectomies, with one death, and that from intestinal obstruction.”¹

¹ Private Letter to Dr. Joseph Price, of Philadelphia.

The author, while appreciating the power of the healthy peritoneum to absorb and remove sero-sanguineous fluids in considerable quantities after operations, is a firm advocate of the drainage-tube.

"If we have any apprehension that the amount exuded will be considerable, we ought to drain; in any case of doubt it is wise to drain."

He uses Keith's glass tubes, and aids their action with the exhausting syringe devised by Tait. This is especially serviceable in removing thick fluids becoming colloid or even clotting. For sutures he prefers silk. Condemning the routine use of opium after abdominal section, he regards a saline purge the most effective of all agents in the treatment of peritonitis, local or general.

"A Seidlitz powder or a dose of Epsom salts will sometimes act like a charm in these cases, putting altogether a new complexion on the case."

One of the most instructive sections of the work is that on Operations for Peritonitis, Perforative, Traumatic, and Suppurative. The limits of this review exclude anything like a full and detailed notice of this chapter. It should be read by every one engaged in surgical practice. We will make one quotation from the section on Suppurative Peritonitis:—

"The existence of purulent peritonitis, however induced, is a clear indication for abdominal section. It is, in fact, nothing more nor less than the evacuation of an abscess, and as such it has had the imprimatur of practical surgeons ever since surgery has shuffled off the coil of peritoneal terror. However induced, and whenever diagnosed, suppurative peritonitis has but one treatment,—abdominal section."

If this rule of treatment were universally adopted, many patients with purulent peritonitis, local or general, now treated by opium internally, and turpentine stupes externally, with death in waiting, could be promptly rescued and restored to health by abdominal section, evacuation, cleansing, and drainage. Referring to Encysted Serous Effusions from peritonitis, we find this positive statement, the truth of which all who have met with this condition will appreciate:—

"It is impossible to diagnose them with precision."

Again:—

"In many cases, encysted dropsy of the peritoneum cannot be diagnosed from ovarian cyst."

One of the most remarkable results of abdominal section is the prompt improvement, and often apparently permanent cure, which follow laparotomy for encysted dropsy, even when of tubercular origin.

The section on Removal of the Uterine Appendages occupies thirty-six pages. It is only just to say that nowhere else is the subject so judiciously and practically treated. The indications for these operations are treated in pathological connection as relating to three different headings: (1) The Appendages; (2) The Uterus; (3) The Nervous System. The purposes or the operation are thus stated: (1) To remove organs incurably diseased; (2) to check or modify the discharge of blood from the uterus; and (3) to completely abrogate the process of ovulation. The latter he regards, when considered in its relation to nerve diseases, such as epilepsy, mania, etc., the least definite and least satisfactory purpose of the operation. The author is not an advocate of this operation in cases of functional disease of the nervous system and obscure reflex neuroses. Ablation of the ovaries and tubes is

only applicable to conditions of disease affecting these organs or the uterus. Oftentimes, to arrest hæmorrhage from the uterus, the entire function of ovulation must be arrested. The reflex neuroses dependent upon inflammatory and degenerative changes in the appendages are so ill-defined, that much discussion and criticism have arisen concerning the scope of the Battey-Tait operation. In this connection the author says:—

“Here we have to deal with sentiment as well as with science. The question is dragged hither and thither between the practical enthusiasm of the operative surgeon and the distinctive criticism of the arm-chair theorist. . . . The evils produced by some men doing too much will never be counterbalanced by other men doing too little.”

Again, he says:—

“The disease—the extent of it and the symptoms which it produces—is the final criterion as to operative interference. It serves no good scientific purpose to describe a symptom as a cause of operation; it is unfortunate that so many operations are recorded as being for ovarialgia, dysmenorrhœa, and such like. . . . It is just as scientific to speak of excision of the hip for reflex pain in the knee, as of excision of the appendages for reflex pain in the back. Wherever it is possible, the disease ought to be quoted as the cause for operation, and not the symptoms of it.”

The fourth section is devoted to operations upon the Non-Gravid Uterus, which consist, for the most part, in Hysterectomy for Cancer and Myoma. The author thus defines his position upon the mooted point, as to whether or not the removal of a cancerous uterus is ever justifiable,—a question which received much attention in the Gynæcological Section of the recent Medical Congress at Washington:—

“I have no hesitation in expressing my belief that, in carefully-selected cases, the operation is both justifiable and proper. The immediate mortality does not forbid it. Recurrence is almost certainly not more rapid than in other operations for cancer, and permanent recovery is just as likely to be secured. And, finally, there seems to be an almost unanimous opinion that death after recurrence is not attended with so much suffering, that perforations of bladder and rectum are not so liable to take place after the uterus is removed, and that existence is prolonged.”

In Section V. the entire field of Operations on the Gravid Uterus and for Ectopic Gestation is traversed. This chapter covers sixty-five pages, and is one of the very best of the entire work. Full consideration is given The Cæsarean Section, Porro's Operation, Laparo-elytrotomy, and the surgical treatment of Rupture of the Uterus, Extra-Uterine Pregnancy, and Pregnancy in one horn of a Uterus,—Bicornis.

By an easy selection we have thus far considered only those departments of the work before us which treat of the surgery of the female pelvic organs, and the principles of abdominal surgery as applied thereto. Thus we have penetrated to the middle of the book. The remaining six sections are devoted to the surgery of the Digestive tract, of the Liver, Spleen, Kidneys, and Pancreas, and some unclassified Operations upon Omental, Mesenteric, Peritoneal, and Parietal Growths. A critical consideration of these sections would carry this review beyond its proper limits. The bibliographical table appended to the text is the most complete ever compiled upon these subjects.

REVIEW.

THE PRACTICE OF MEDICINE AND SURGERY APPLIED TO THE DISEASES AND ACCIDENTS INCIDENTAL TO WOMEN. By W. H. Byford, A.M., M.D., Professor of Gynæcology in Rush Medical College, and of Obstetrics in the Women's Medical College; and Henry T. Byford, M.D. Fourth Edition, revised, re-written, and enlarged. 306 illustrations, 832 pages. P. Blakiston, Son & Co., Philadelphia.

In reviewing a new edition of a work so well known and highly esteemed as that of Professor Byford, it is only necessary to briefly allude to the excellence of the former editions, and to point out the improvements in the new one. In this case, however, the book has been so completely re-written that it is in effect a new work. The principal additions, as stated in the preface, are the chapters on "Practical Observations upon the Anatomy and Physiology of the Female Pelvic Organs;" "Examination of the Female Pelvic Organs" (three chapters); "Displacements of the Uterus" (three chapters); "Affections of the Ovaries" and "Fallopian Tubes;" and the paragraphs upon "Oöphorectomy," "Tumor of the Broad Ligament," etc. Anatomy is in some ways common property, but our author has made this part of his work not only clear, but interesting. He devotes much space to the pelvic floor and perineum, and rightly. The pelvic floor is the very foundation of the healthy woman, and its injuries lie at the root of the great majority of the ills and miseries which afflict married women.

A sound perineum may well be called the fundamental condition of health and comfort, while a torn perineum is the fundamental basis of gynæcology. Nothing can exceed the clearness and thoroughness with which this whole subject is treated. The various methods of operating for lacerated perineum are clearly given, and here as elsewhere there is frequent reference to the work of the German and English surgeons. In fact, one of the most interesting features of this work is the way in which gynæcology is treated as a part of the science of the whole world, and not as a peculiarly American development. There is no disposition to glorify the gynæcology of this country in comparison with that of others; and this is the more graceful, as the distinguished author might well have intimated "*quorum magna pars ego*" without overstepping the limits of modesty.

It is well to note that Byford unconditionally recommends an immediate operation for lacerated perineum, and forcibly remarks: "The reason why the immediate operation has shown so unfavorably is poor

surgery; superficial parts alone have been united, edges have been pared so that the subsequent retraction has drawn upon the stitches, proper coaptation has not been attempted, and the wound, although in an unfavorable place for cleanliness and aseptic treatment, has not received even the ordinary attention given to wounds in other parts of the body."

The chapters on the various functional disturbances of the female are very full and instructive, although some things have been retained which we should like to see omitted entirely; the various forms and uses of the death-dealing sponge-tent, for example, and the time-honored pictures of Sim's operation for slitting the cervix, for dysmenorrhœa.

The use of the name "metatithmenia," meaning misplaced menstruation, for the condition indicated by an effusion of blood in the pelvis, seems very objectionable. In the first place, it implies a diagnosis by a name, when often the real cause of the trouble is very obscure.

Denn eben wo Begriffe fehlen
Da stellt ein Wort zur rechten Zeit sich ein.

Secondly, long, hard, artificial Greek names are a nuisance, and are justly going out of fashion. Thirdly, if we must have it, the name ought to be compounded from the root *thē*, which is best seen in the second aorist, and not from the pres. indic., *e.g.* metathesis, hypothesis, diathesis, etc.

There is very little said about operating under irrigation, and the whole question of wound infection, although mentioned in certain chapters, is not incorporated into the text, as it would probably be if the work were written to-day. In many of the references, papers and works of 1876-1880 are characterized as recent, probably by oversight.

The new drawings, although very plain and instructive, are not very artistic, and might be improved in that respect; but there is no misunderstanding them.

The author's well-known views on the benefits of ergot in the treatment of uterine fibroids are given at length. Although of undoubted value in some instances, yet as a rule other practitioners have failed to obtain the benefits which were hoped for from ergot; and the same may be said of the treatment by electricity, which, after being tried and found wanting, is now resurrected by Apostoli.

On the whole, however, Byford on Diseases of Women will be more than ever a valued and important work; all through it are scattered the evidences of sagacity, prudence, and originality which distinguish the honored senior author, and equally may be seen in much of the new work the wide information, close thought, and good judgment of his most worthy associate.

E. W. C.

HOSPITAL REPORT.

TWO CASES OF PELVIC ABSCESS REPORTED BY F. L. BURT, M.D., HOUSE SURGEON, MURDOCK FREE HOSPITAL FOR WOMEN, BOSTON.

THE following cases are very like Case I., published in the first number of the *ANNALS*, but the subject is of sufficient importance to bear repetition, and is of especial interest in connection with the experiments of König and of Schlesinger, published in this number, showing the course which the products of inflammation arising about the broad ligament would naturally tend to follow :—

CASE I. Mrs. G., aged 20, entered the hospital on Sept. 1, 1887, giving a history as follows: Menses at 14 years 3 months. Last menstruation July 1-4, inclusive. Catamenia never attended with any pain; no children; one miscarriage at four months, in March last. She describes herself as unusually well in every respect until the 14th of March, at which time she miscarried. The process was a very painful one, and it was followed by a good deal of hæmorrhage, lasting between five and six days, and attended by considerable prostration, the secundines, however, coming away without interference. About two weeks later she began to have trouble in the left side; at first stinging pains, then soreness about the side, and numbness about the left thigh and leg. Following this, two weeks later, came pain in the back. She was in bed from March 14 to June 20, and during this time she was said to have typhoid fever. There was no relief, and all the symptoms have continued till the present time. On entrance she presented a woe-begone appearance; was very much emaciated; had scarcely any appetite: temperature, 100°. There was a swelling just above Poupart's ligament on the left, near the superior spinous process, and another just below the twelfth rib, at the edge of the quadratus lumborum muscle. Each evidently contained pus, and a sense of fluctuation imparted showed that there was communication between the two points. Examination by vagina revealed a large, soft mass pressing into the pelvis from the left, and the uterus tipped anteriorly and to the right. On September 1 a small opening was made into the swelling in the groin, without ether, and, as the patient cried, the pus gushed out with such force as to produce a fountain about eighteen inches high, continuing several seconds. A sound was then introduced, and it passed easily upward and backward a distance of about eleven inches, and was felt just beneath the skin on the back. An incision was made through the skin, so that the sound passed through. A rubber drainage-tube was fastened to the end of the sound and pulled through the body, and allowed to project a little from both openings. An irrigation fluid,

$\frac{1}{2000}$ sublimate, was passed freely through the sac, care being taken, in order that none of this solution should remain and be absorbed, that it was followed by a considerable quantity of saturated solution of hydronaphthol. Irrigation in this manner was followed daily, and the discharge was constantly lessening. At the end of three weeks a double tube was introduced behind, and the long tube pulled down in front and about half removed. October 1 the tube behind came out and was not replaced, the wound healing entirely in five days. The other tube was frequently shortened, and, when reduced to one inch in length, it was removed and parts allowed to heal. Patient weighed 108 pounds on entrance; eight pounds of pus were removed, and at the time of discharge she had gained forty-five pounds.

CASE II. Mrs. M., of Roxbury, is 36 years of age, and is the mother of six children, whose ages range from 11 to 1. She has always been a healthy woman; has had no trouble with her labors except with the last, when there was a laceration of the cervix and rupture of perinæum, which have caused her no inconvenience.

Children all perfectly healthy.

Menses in 18th year; last appearance eight months ago. Nine weeks ago she had a miscarriage, at two months, after which she did very badly, and one week later she began to be feverish, which condition lasted three weeks according to history, but has in fact continued to the present time. There has been considerable pain, lasting all through the trouble.

She entered the hospital on July 6, 1887, when the condition found is as follows: A swelling appeared in the left groin, just above Poupart's ligament, which fluctuated somewhat, and between this and the vagina was a thick mass of indurated tissue. The left leg is drawn up at right angles, and cannot be straightened or moved without severe pain. She is in a condition of extreme suffering, very much emaciated and haggard-looking; very weak, requiring to be moved carefully, and with almost entire loss of appetite. Laceration of cervix and perinæum. A poultice was applied to groin for three days, when, on July 9, an opening was made and a quart of pus passed off. A sound was passed upward and backward a little more than eight inches. The cavity was well irrigated first with $\frac{1}{2000}$ sublimate, and afterwards with hydronaphthol solution, and a drainage-tube placed to siphon off the discharge. Irrigation was continued every one, two, or three days in the same manner. The tube was shortened as fast as possible, till it was removed, Aug. 20.

On Aug. 16 the cervix and perinæum were operated upon. She made a rapid recovery, and was discharged, perfectly well, on Sept. 4, having gained twenty-five pounds.

LIST OF ILLUSTRATIONS.

	PAGE
Fig 1. — Section through the pelvis with both bladder and rectum empty according to <i>Pirogoff</i> . (From <i>E. Martin's Hand Atlas</i> . Second edition of <i>A. Martin</i>)	
Fig 2. — Section through the pelvis with the bladder filled, according to <i>Pirogoff</i>	
Fig 3. — Section through the pelvis with the rectum filled, according to <i>Pirogoff</i>	
Fig 4. — Section through the pelvis with both bladder and rectum filled. Section according to <i>Kohlrausch</i>	
Fig 5. — Normal position of the uterus, according to <i>C. Ruge</i>	
Fig 6. — Position of the pelvic viscera, according to <i>Moreau</i>	
Fig 7. — Examination table	
Fig 8. — Combined examination, according to <i>Schroeder</i> . (<i>Handbook of the diseases of the female sexual organs</i> . VII. edition)	
Fig 9. — Cylindrical speculum	
Fig 10. — Duck-bill speculum, according to <i>Kristeller</i>	
Fig 11. — <i>Simon's</i> speculum	
Fig 12. — Side piece, according to <i>Heger</i>	
Fig 13. — Bullet forceps, according to <i>Heger</i>	
Fig 14. — Sound, according to <i>E. Martin</i>	
Fig 15. — Arrangements for operation	
Fig 16. — Position of the patient for an operation in the vagina	
Fig 17. — Curette, according to <i>Roux</i>	
Fig 18. — Mucous membrane of the uterus, according to <i>Schroeder</i>	
Fig 19. — Menstruating mucous membrane of the uterus, according to <i>Schroeder</i>	
Fig 20. — Cold-speculum, according to <i>Kisch</i>	
Fig 21. — Development of the female genitals, according to <i>Schroeder</i> . Position of the parts, before the union of the outer reduplication with the allantois and the rectum	
Fig 22. — Formation of the excrementory system	
Fig 23. — Formation of the perineum. Development of the uterus and the genito-urinary sinus	
Fig 24. — Atresia (corresponding to Fig. 21)	
Fig 25. — Atresia with separation of the allantois from the rectum	
Fig 26. — Congenital distention of one side of a double uterus and vagina with blood. (<i>Hæmatocolpos</i> and <i>hæmatometra unilateralis congenita</i> .) From one of my preparations	

- Fig. 27 — Double Uterus and Vagina. From *E. Martin's Hand Atlas*.
Edition 2. Table XXXVI. *aa* — Double entrance to vagina;
b — Orifice of urethra; *c* — Urethra; *dd* — Double vagina;
ee — Double os uteri; *ff* — Double cervix; *gg* — Double fun-
dus; *hh* — Round ligaments; *ii* — Fallopian tubes; *kk* —
Ovaries
- Fig. 28. — Atresia with imperforate hymen. *Hæmatocolpos congenita*
- Fig. 29. — Atresia of the vagina. *Hæmatocolpos and hæmatometra con-*
genita
- Fig. 30. — Atresia of the external os uteri. *Hæmatometra*
- Fig. 31. — Acquired hæmatometra
- Fig. 32. — Primary atrophy of the uterus, according to *Virchow*
- Fig. 33. — Infantile uterus observed in an adult
- Fig. 34. — Scarificators, according to *Mayer*
- Fig. 35. — Intra-uterine stem pessary, according to *E. Martin*. *a* — Intra-
uterine portion; *b* — Vaginal portion
- Fig. 36. — Subdivisions of the cervix, according to *Schroeder*. *a* — Portio
vaginalis; *b* — Portio media; *c* — Portio supravaginalis;
p — Peritoneum; *bl* — Bladder
- Fig. 37. — Antelexion of the uterus
- Fig. 38. — Antelexion of the uterus, with elongation of the supravaginal
portion of the cervix
- Fig. 39. — Puerperal antelexion of the uterus, from *E. Martin's Hand Atlas*.
Table XL. Placental tissue adherent to the placental site on
the posterior wall
- Fig. 40. — Congenital retroflexion of the uterus, according to *C. Ruge*
- Fig. 41. — Incarcerated retroflexion of the gravid uterus with formation of a
diverticulum, from *G. Veit. Volkmann's collections*, No. 170
- Fig. 42. — Puerperal retroflexion of the uterus, according to *E. Martin*.
Placental tissue adherent to the placental site on the anterior
wall
- Fig. 43. — Retroflexion of the uterus
- Fig. 44. — Retroflexion of the uterus, from *F. Winkel's photographic Atlas*.
a — External os uteri; *b* — Rectum
- Fig. 45. — *Hodge's* retroflexion pessary
- Fig. 46. — *Schultze's* figure-of-eight retroversion pessary. (*Hegar and Kalten-*
bach. Operative Gynækol. II. Aufl.)
- Fig. 47. — Cradle pessary, according to *Schultze*
- Fig. 48. — Section through the floor of the pelvis. For the demonstration of
the layers of muscles and fat, and also the urethra, vagina,
and rectum
- Fig. 49. — Prolapse of the vagina and uterus
- Fig. 50. — Prolapse of the uterus with open vulva
- Fig. 51. — Prolapse of anterior vagina, with cystocele
- Fig. 52. — Prolapse of the anterior vagina, with a cyst of the anterior vaginal
wall
- Fig. 53. — Prolapse with enterocele of the anterior vagina
- Fig. 54. — Prolapse with enterocele of the posterior vagina

- Fig. 55 — Prolapse of the posterior vagina, with rectocele
- Fig. 56 — Prolapse of the anterior vagina with cystocele, of the posterior vagina with rectocele, and prolapse of the uterus with elongation of the supra-vaginal portion of the cervix
- Fig. 57 — Prolapse of the cervix uteri. Elongation of the infravaginal portion of the cervix (from *Froriep's* Copperplates. Weimer, 1842)
- Fig. 58 — Prolapse of the uterus. Elongation of both infra- and supra-vaginal portions of the cervix
- Fig. 59 — Prolapse of the antelected uterus. Ectropion of the os uteri according to *Frenkel*
- Fig. 60 — Retroflexion of the prolapsed uterus, according to *Spiegelberg*
- Fig. 61 — Prolapse of retroflected uterus. Inversion of the vagina, cystocele, rectocele
- Fig. 62 — Pedunculated pessary
- Fig. 63 — Method of operation for prolapse, according to *Winkel*
- Fig. 64 — Posterior colporrhaphy, according to *Winkel*
- Fig. 65 — Method of operation for prolapse, according to *Nengebauer*.
Denuded surface
- Fig. 66 — Colporrhaphy, according to *Nengebauer*
- Fig. 67 — Denuded surface for posterior colporrhaphy, according to *Simon*
- Fig. 68 — Posterior colporrhaphy, according to *Simon*
- Fig. 69 — Posterior colporrhaphy, according to *Lossen*
- Fig. 70 — Posterior colporrhaphy, according to *Fritsch*
- Fig. 71 — Denuded surface for posterior colporrhaphy, according to *Hegar*
- Fig. 72 — Posterior colporrhaphy, according to *Hegar*
- Fig. 73 — Posterior colporrhaphy, according to *Bischoff*
- Fig. 74 — Posterior colporrhaphy, according to *Bischoff*
- Fig. 75 — Anterior colporrhaphy
- Fig. 76 — Knife for making the denuded surface in anterior colporrhaphy, according to *Frau Horn*
- Fig. 77 — Instrument for holding the flap of skin in anterior colporrhaphy, according to *Frau Horn*
- Fig. 78 — Transverse section of the vaginal canal, according to *Henle*
- Fig. 79 — Denuded surface for posterior colporrhaphy, according to *A. Martin*
- Fig. 80 — Double lateral elytrorrhaphy. Interrupted sutures
- Fig. 81 — Denuded surface and sutures for rebuilding the perineum
- Fig. 82 — Thread holder, according to *Baumgartner*
- Fig. 83 — Anterior colporrhaphy. Continuous suture in superimposed layers
- Fig. 84 — Double lateral elytrorrhaphy. Continuous sutures in superimposed layers
- Fig. 85 — Rebuilding the perineum. Continuous sutures in superimposed layers
- Fig. 86 — Rebuilding the perineum, partly closed by the continuous suture in superimposed layers
- Fig. 87 — Silk interrupted sutures in anterior colporrhaphy
- Fig. 88 — Profile of the operation for posterior colporrhaphy according to *Martin*

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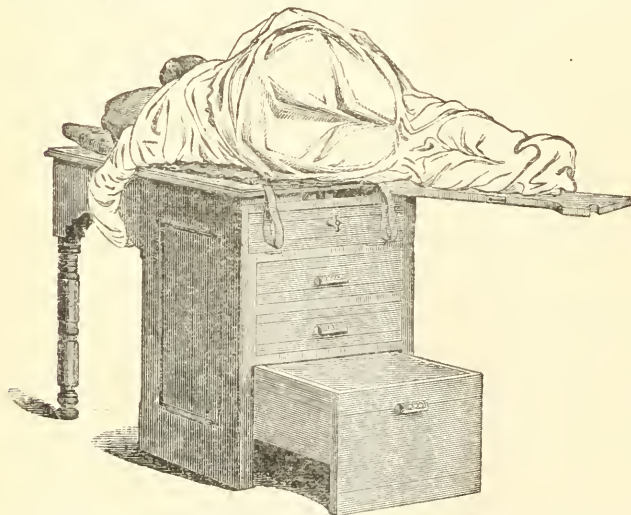
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ANNALS
OF
GYNÆCOLOGY

A MONTHLY REVIEW

OF
GYNÆCOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY.

EDITED BY
E. W. CUSHING, M.D.,
BOSTON.

WITH THE COLLABORATION OF

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MARCH, 1888.

CONTENTS:

	PAGE	PAGE
PERMEABILITY OF THE CERVICAL CANAL. <i>Graily Hewitt, M.D., F.R.C.P.</i>	241	GYNÆCOLOGICAL SOCIETY OF PHILADELPHIA 245
REPORT OF FOUR CASES OF EXTRA-UTERINE PREGNANCY. <i>J. Price, M.D.</i>	241	DETROIT GYNÆCOLOGICAL SOCIETY 249
DISTRIBUTION ON SALPINGITIS	246	EDITORIAL 253
MECHANICAL TREATMENT OF ABORTION. <i>H. W. Longyear, M.D.</i>	251	SALPINGITIS 257
REMARKABLE VAGINAL SEPTUM. <i>John D. S. Davis, M.D.</i>	259	TRANSLATION.—Complete Hypoplasia 261
		<i>Prof. Mann Sabin</i> 265
		TREATMENT OF CARCINOMA UTERI 269
		<i>Schantz</i> 273
		HOSPITAL REPORTS 277
		TWO CASES OF GONORRHOEAL SALPINGITIS 281

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a

Plate I.

- a*. Ovarian abscess, large, containing a concert of pus.
- P*. Large, tortuous peritoneal general adhesions associated with pyosalpinx.
- C*. Broad ligament cyst.
- Extensive enucleation. Drainage. Recovery. Cure.
- Courtesan. A new, active, healthy young woman.

This and the two following figures are from cases operated on by Dr. J. J. Perry, Philadelphia.



A. Ovary (right).

B. Broad ligament and tube (tube not seen).

C. Ruptured tubal pregnancy, large clot protruding. This is the pavilion extremity of tube.

Plate II — Fig. 1.
Tubal pregnancy.



Plate II. — Fig. 2.

1, 1, 1. Fallopian tube, opened, showing internal structure.
P. Ovary, showing relation to parts and tube.

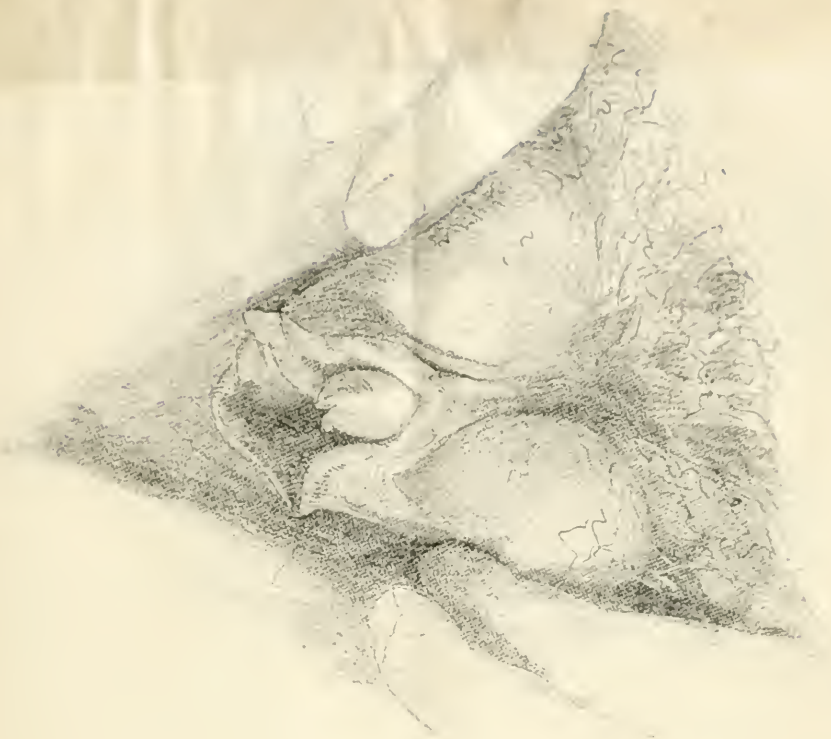


Plate III. — Fig. 1.



Plate III. — Fig. 2.

[illegible]



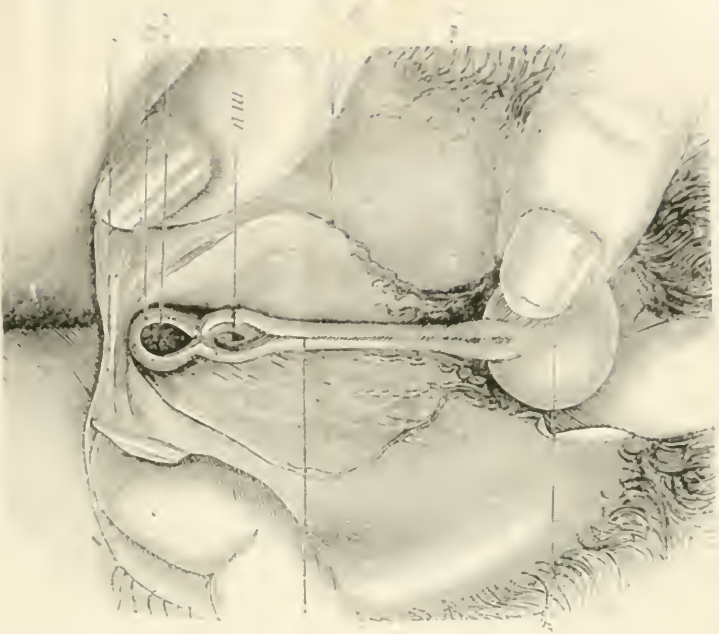


Plate IV.—Fig. 1.

Female organs of a hypopodid murex.

l. m. Labia majora. *l. m. m.* Labia minora. *cl.* Clitoris. *p.* Penis. *v.* Vagina. *h.* Hymen. *f.* Frenulum.

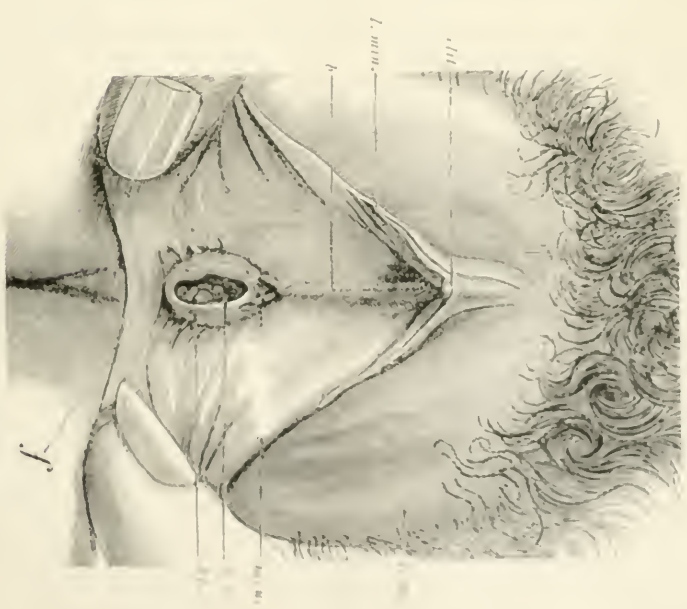


Plate IV.—Fig. 2.

Female organs of a well-developed murex.

l. m. Labia majora. *l. m. m.* Labia minora. *cl.* Clitoris. *p.* Penis. *v.* Vagina. *h.* Hymen. *f.* Frenulum.



ANNALS OF GYNÆCOLOGY.

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No. 6.

THE PERMEABILITY OF THE CERVICAL CANAL AS AFFECTED BY PRESENCE OF FLEXION OF THE UTERUS.

BY GRAILY HEWITT, M.D., F.R.C.P.,

*Emeritus Professor of Obstetric Medicine, University College, London; Consulting
Obstetric Physician to University College Hospital, London.*

THE condition of the cervical canal and of the internal os uteri, as affected by flexion of the uterus, has been the subject of much dispute. On the one hand, it is argued that the permeability of the canal may be much interfered with by presence of flexion. By others, it is denied that any loss of permeability is sustained in such cases.

As a contribution to the solution of the question the following note is submitted:—

The drawings here given represent the uterus in a case of acute ante-flexion.

The specimen illustrated is in University College Museum. The history of the case from which the specimen was taken is unknown. It is a case of acute ante-flexion of the uterus, and as such was depicted in my work on diseases of women some years ago. Since that time the specimen has attracted some attention from its being a well-marked one, and a median section has been made to show the uterine cavity. The section has, probably unintentionally, been made a little to the left of the middle line. In its present state the specimen was photographed for me under the kind direction of Dr. Quarry Silcock. Fig. 1 represents the uterus and its aspect on (nearly) mesial section. The uterine cervical canal is here hardly visible at the centre and upper part of the cervix, owing to the closeness of apposition of the anterior and posterior walls, which closeness of apposition is due, as is manifest, to the presence

of the flexion. In Fig. 2 is shown another photograph of the same uterus, but the cervical canal on one side (the right) is opened out by the traction of two threads, one attached to the anterior, the other to the posterior,

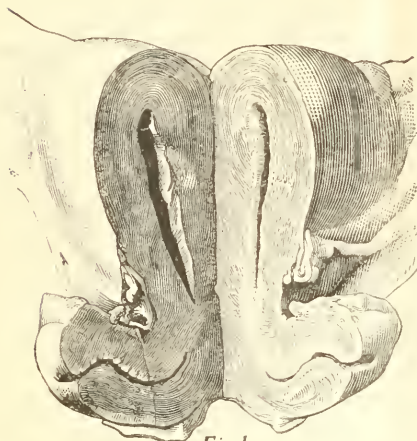


Fig. 1.

edge of the os uteri. It is thus made evident that the cervical canal is not by any means destroyed. The interesting fact becomes evident that the canal is unusually widened from side to side, at the same time that it is so narrowed from before backwards that it is hardly visible when the canal is in its untouched flexed state. The fact that the section has been made a little to the left of the mesial line must be borne in mind, for it thus happens that on the opened outside the section

shows more than a half of the canal.

In this particular case the part of the uterine cervical canal most affected by the flexion is just below the internal os. The bending of the uterus produces a curvature of the canal which operates particularly on the canal for about three-quarters of an inch. In this space the canal is excessively wide from side to side, but excessively narrow from before backwards, and it is manifest that the lateral widening, as well as the antero-posterior compression and narrowing, result from the shape of the uterus. The inference also follows that exaggeration of the degree of the bending of the uterus would have the effect of increasing the compression of the uterine canal.

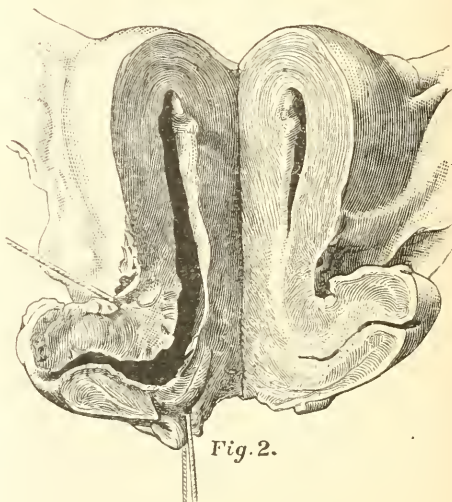


Fig. 2.

The important question as to the effect of flexion in interfering with the permeability of the cervical canal appears to receive some elucidation from

Martin's consideration of the specimen above depicted. It is evident enough on the one hand that the flexion almost destroys the *actual* permeability of the cervical canal, while hardly at all affecting its virtual permeability. It is evident, further, that it is comparatively easy by straightening the uterine cervix to restore the potency to the canal. During life this could have been probably easily done by introducing the uterine sound. If the uterus was rigid, the sound would only be made to pass the narrowest canal, and with difficulty, when curved so as to resemble the curve of the bent uterus. But the difficulty would be obviously much less in introducing the sound if the uterus were not rigid.

In cases of the kind above depicted it is generally found that the uterus is low down in the vagina, and the point of the cervix, resting on the vaginal floor, becomes gradually bent upwards and forwards. In this position the flexion would be increased by straining, by standing, and like exertions. It would be expected under circumstances so favorable to the maintenance of the flexion that the canal compression would be increased.

The condition of the tissues of the cervical canal is a matter of great importance. In some cases the texture is unnaturally soft, and this softness, as I have elsewhere shown, is probably the first stage in the occurrence of flexion. When the soft condition of the cervix has lasted for a time, and the uterus becomes much flexed, a change may occur, the health may improve, and the cervix and uterus assume a more rigid and healthy state as regards tissue. But the form of the uterus remaining unchanged, and the flexion persisting, the condition is one in which the cervix does not readily unbend, and the distortion, as well as the virtual obstruction in the cervical canal, continue. This appears to have happened in the case above described, in which the decisive sharp flexion is to be regarded as one of a chronic nature.

It is not easy, looking at this specimen, to avoid the conclusion that escape of menstrual fluid and menstrual *debris* from the uterus must have been very difficult so long as the uterus remained flexed to its present degree.

REPORT OF FOUR CASES OF EXTRA-UTERINE PREGNANCY.

BY J. PRICE. PHILADELPHIA.

No. 1. — KATE ASHMORE (white). age 30, married nine years; two children; one miscarriage; labors easy; menses every three weeks; duration, seven days; great menstrual pain; last period absent; rectal and vesical disturbance. Irregular hæmorrhagic discharge about the seventh week; constant pelvic pain. Ex., Uterus in good condition; post. and to left of uterus, a hard, firm, irregular mass. Diagnosis, tubal pregnancy. Op., left ovary and tube removed, both large and covered with blood-clot, completely filling the pelvic cavity; adhesions general and well organized. Free irrigation and no drainage; complete recovery. Present condition that of perfect health. See Plates I. and II.

No. 2. — Name of patient, MARY FULTZ (white).

1. Date of operation. Wednesday, March 30, 1887.
2. Age of woman. 37 years.
3. Number of normal pregnancies. 4. — 3 males. 1 female.
4. Length of survival of woman. 14 days.
5. " " " child. 4 hours.
6. Duration of gestation. about $7\frac{1}{2}$ months.
7. Cause of death. hæmorrhage; due to walking, and straining while on the commode. She was an *intractable* subject.
8. Residence, 1810 Fillmore st., Camden. N.J.

Points of Interest. — Beginning as a right tubal pregnancy, with a history of pain, shock, and high temperature, indicating rupture of tube at about the fourth month, from which she recovered in a few days; subsequently her condition improved until within about two weeks prior to the operation, when she had paroxysms of pain, which required the free use of opium; this continued up to the time of the operation.

Examination. — She was small-boned and greatly emaciated. Palpation showed symmetrical tumor only to be felt; vaginal — thin sac wall low down and posterior, through which the extremities of the child were easily felt; cervix high up and pushed far forward; the diagnosis of "extra-uterine pregnancy" had been made by her physician, Dr. Donges.

Operation. — Short incision, free discharge of bloody serum, uterus only to be seen and felt, flattened out to about six inches, forming the anterior wall of the sac. A distinct sulcus between the fundus and sac.

Sac punctured in the region of the left ovary; an active female child delivered; cord severed between compression forceps; uterus contracted rapidly, forming a perfect uterine ovoid about the size of a fist; the sac also contracted rapidly. General intestinal adhesions to posterior surface of sac and uterus and laterally. The rapid contraction of the uterus and friable sac, and almost general placental attachment, rendered the stitching of sac to abdominal opening most difficult; the intestines at the upper surface of the sac were stitched to the abdominal wall.

After Treatment. — Drainage and free irrigation. The wound remained healthy and clean; large quantities of placental tissue washed away daily; patient remained free of pain, and her general condition was good until she persisted in getting out of bed that she might use the commode and not the bed-pan.

Notes of post-mortem made by Dr. Chas. B. Penrose: "The abdominal incision was united throughout. The adhesions between the sac and the abdominal walls were firm, with the exception of the upper part, where the adhesion had yielded, and a loop of small intestine about five inches in length had slipped from above into the abdominal opening. About six ounces of clotted blood were found in the peritoneal cavity. There were no signs of peritonitis. The intestines were pale and bloodless. The uterus was enlarged and flattened against the anterior abdominal wall. The remains of the placenta presented at the lower right side, and were about the size of a small fist. The placenta was adherent to the posterior surface of the uterus, to the left ovary, to the posterior surface of the right broad ligament, to the right side of the pelvis, to a portion of the ileum and of the large intestine. A corpus-luteum was found in the right ovary. The outer half of the right Fallopian tube, if present, was not removed. No examination was made of the other parts of the body.

No. 3. — LIZZIE WHITE (colored), age 28. married eight years; miscarriages, six; complaining of irregular bleeding; uterus retroflexed, enlarged and soft. Fulness and tenderness in right ovarian and tubal region. Section Sept. 11, 1887; tubal pregnancy; tube removed intact. General adhesions; uterine adhesions released. No drainage; rapid recovery.

No. 4. — S—, age 27 years, married ten years; never pregnant; patient of Dr. John Pearson. The doctor had diagnosed ruptured tubal pregnancy and general peritonitis; the hæmorrhage had been very great, and the anæmia most marked. Abdominal section, general peritonitis and adhesions, with degeneration of all tissues. Adhesions friable and cheesy; abdominal cavity full of clotted blood, in collapse at time of

operation. Incision and drainage; no attempt made at removal of sac. Died the following day. This was the most unsatisfactory operation I ever attempted; small room with one window; done late in the evening with patient in bed. As Mr. Tait says: "Everything must be perfection itself to do good surgery." Notwithstanding this woman was far gone and seemed hopeless, I still reproach myself for not removing the sac.

DISCUSSION ON SALPINGITIS.

*At the Annual Meeting of the New York State Medical Society, held at Albany,
February 7, 1887.*

CAUSES. — By Dr. C. C. LEE, of New York.

A study of the anatomical structure of the Fallopian tubes is necessarily preliminary to the investigation of the causes which lead to inflammation in them. They are developed structurally from the ducts of Müller, and the arrangement of their constituent parts is identical with that which obtains in the uterus. It is, therefore, not a matter of surprise that the inflammatory conditions which affect them should in very many cases be secondary to inflammations affecting the uterus. The pathology of the disease is still incompletely understood, and has been derived largely from the study of cases which have been accidentally discovered after death. The speaker would consider Fallopian salpingitis in two forms, — the catarrhal, and the true or parenchymatous; the first being simply an inflammation of the mucous membrane lining the tubes, the second an inflammation of all the tissues. As an illustration of the frequency with which one or the other of these forms occurs, it was stated that Hennig found evidences of tubal inflammation in three-fourths of a large number of cases in which autopsies were made. Of 500 autopsies which were made by Winkel, catarrhal salpingitis was found in 205 of them. In general it may be said that any cause which would produce uterine disease of any severity would also produce catarrhal salpingitis, and in cases in which the disease is primary it may be caused by exposures or shocks of various kinds. It often follows abortion which has occurred in the earlier months of pregnancy. In such cases incomplete evacuation of the contents of the uterus has been followed by decomposition, inflammation, and sepsis, and this process extends to the tubes. It may also follow scarlatina, small-pox, and other infectious diseases by the same process of extension and propagation. In other cases in which

traumatisms of the uterus have been received the same process may obtain; also in those cases in which atresia of the vagina and uterus has led to retention of the products of menstruation. These facts suggest the greatest care in cases in which intra-uterine injections are required, lest there be retention and decomposition of the injected material, with subsequent salpingitis.

PROGNOSIS. — By GEORGE SEYMOUR, of Utica.

The question of prognosis is more frequently propounded to the gynaecologist in private practice than it is to the general practitioner, — that is, in connection with the history of ordinary diseases; and the gynaecologist who gives the most reliable or the most satisfactory answer to questions appertaining to prognosis is the one whose opinion is most likely to be sought and followed. The history of salpingitis shows that it is a disease of very common occurrence, and also that it is not infrequently associated with inflammation of the ovaries, uterus, and adjacent peritonæum and connective tissue. Its simpler forms, whether acute or chronic, have a natural tendency to recovery with the restoration of function, just as is the case in endometritis, of which it may be the extension. Säger's classification of the disease into septic, tuberculous, gonorrhæal, syphilitic, actinomycotic, and mixed, is believed to be the most complete, and perhaps the best which has been given. It is a significant fact that the pathologist of St. Bartholomew's Hospital in London, in a recent paper before a London society, reported that in a large number of autopsies Fallopian tube disease was found in 17 per cent. of all (female) cases, either in the form of hæmato, pyo, or hydro salpinx. A somewhat smaller percentage was reported from Guy's Hospital. At the same meeting Tait reported that 10 per cent. of the out-patients in the Birmingham clinics for diseases of women were similarly affected. It is but natural that the profession at large should look upon these statements as not altogether impartial and reliable, nevertheless they show that the disease is much more common than was formerly supposed. It is extremely desirable that the line should be drawn between those cases which are likely to recover without the use of the knife, and those in which cutting operations are indispensable. This has not yet been satisfactorily done, and it can be shown that many cases in which operation has been recommended and declined have recovered. The frequency of the disease is such that it should be sufficiently well understood by the general practitioner to enable him to give an opinion as to its prognosis. Much further investigation is necessary before satisfactory knowledge upon these points can be obtained.

MEDICAL TREATMENT. — By DR. F. A. CASTLE, of New York.

Aside from the fact that this disease has usually been considered from a surgical stand-point, it is sufficiently evident that there is very little which can be said in regard to its medical treatment. Tait has dogmatically stated that no medical treatment can relieve this disease, and that the only treatment which is applicable consists in the removal of the appendages. The speaker is forced to admit that the treatment by drugs and local applications is usually unavailing; though this is due in part, at least, to the fact that cases are not seen sufficiently early in their history. If an early diagnosis can be made, attempts at relief may prove more or less effective. The speaker recommends that in all cases avoidance of sexual intercourse should be insisted upon. Applications of heat externally, vaginal tampons saturated with pure glycerine, the use of the bromides, saline purgatives, aconite, veratrum, and belladonna, to restrain the heart's action, especially at the time of the menstrual period, will often relieve troublesome symptoms. A combination of hyoscyamus and bromide of sodium has been found effective in this as well as in other troubles of the female pelvic organs. The heart stimulants should be avoided, also the preparations of aloes. Massage has been recommended as a means of relieving the adhesions which attend this disease. This would be a very useful agent if it could be properly applied. The hypersensitive condition of all the parts which are involved, however, renders the slightest manipulation exceedingly painful, and hence this method of treatment is usually inapplicable. One cannot be too careful in studying all cases of pelvic inflammation in their early stages, for such minute study may enable one to detect salpingitis at a time when curative means may be employed.

SURGICAL TREATMENT. — By W. M. POLK, of New York.

The speaker felt that this portion of the subject had been so thoroughly discussed in the past few years that nothing new could be added. It seemed to him that the old theory, pelvic cellulitis, upon which many cases of salpingitis were supposed to hinge, was exploded, and that it was only those who believed in this theory who continued to treat salpingitis indefinitely before resorting to cutting operations. The plain proposition was, that salpingitis was a disease in which the Fallopian tube or tubes contained pus, blood, or other fluids. Such accumulations in other parts of the body were regarded as indications for operative treatment to effect their removal from the body; logically the same rule should apply in this case. Now that the fear of opening the peritoneal cavity is largely a thing of the

past, such operations could be undertaken with a good degree of confidence. It was believed that the conditions known as pyo-salpinx and hamato-salpinx were the ones in which operations are most frequently called for, on account of the tendency of the pus and blood represented by these conditions to accumulate. The speaker did not believe that any inflexible rule should be laid down in regard to the position of the incision, if an operation for salpingitis were determined upon. While the linea alba may be most suitable in many cases, in others the seat of the disease may be more readily reached by lateral incision. If the disease were of tubercular origin, the speaker believed that an operation was not absolutely necessary. If the case were one of interstitial salpingitis, with obliteration of the cavity of the tubes, and great change in the tissues, it might be considered complicated; the results of the inflammation might undergo resolution, but the condition was very often such that temporizing would be unwarrantable. If only one tube were diseased, the question becomes pertinent whether the healthy tube should be spared. Many gynaecologists believe that it should. The speaker did not agree with such a belief, and considered that the patient was thus exposed to the necessity of another operation, which would probably be required at a subsequent period. The double operation seemed to be especially indicated if endometritis were associated with disease of one of the tubes. If the disease of the tubes were simply of a catarrhal character, removal of the appendages would not be indicated; such a condition is probably present in every woman who has suffered with circum-uterine inflammation. In those cases in which adhesions have formed, the tubes being still patulous, but the ovaries bound down and prevented to a greater or less extent from performing their function, in which also there may or may not be displacement of the uterus, and in which, for obvious reasons, menstruation is excessively painful, the speaker thought the best method of operation consisted in opening the abdomen and breaking up or dividing the adhesions. The criticism had been made that these adhesions would re-form; but he was not certain of that, and believed that good results had followed the operation in his hands. Schultze's method of breaking up the adhesions would be admirable if practicable; but in most of the cases in which it was indicated he did not believe it was practicable. The method of forcibly breaking up adhesions when connected with a displaced uterus had been advocated years ago by Van de Warker; but the speaker did not believe that any plan met the conditions of the case so satisfactorily as that which he had advocated; namely, opening the abdomen, and carefully breaking or dividing the adhesions as they were actually seen and appreciated.

RESULTS OF OPERATIVE TREATMENT.—By W. G. WYLIE, of New York.

The speaker thought that a mistake had been made in considering that gonorrhœa and catarrhal inflammations of the uterus were the most frequent causes of salpingitis. In a large number of cases of gonorrhœa which he had carefully studied to ascertain its bearing upon this affection, he was unable to see that it acted to any great extent as a causative factor. In his judgment sepsis was the most frequent cause, especially when it was consequent upon abortion or parturition at term. He had observed that pyo-salpinx was frequently traceable to such a cause. Endometritis in unmarried women was also a cause, and if means could be adopted to prevent this disease there would be fewer cases of salpingitis among them. Salpingitis was usually accompanied or followed by localized peritonitis; then came closure of the tube, and, when this was, accumulation of the secretions of whatever character must result. The diagnosis of the disease is certainly difficult in many cases. The speaker reported 78 cases in which he had performed abdominal section during the past year. As to the question of danger in operating for salpingitis, he believed that tapping the tumor *per vaginam*, in case it could be reached by that avenue, was nearly as dangerous as abdominal section; besides, if both tubes were affected, it was usually impossible to reach more than one of them by this method. He agreed with the statement that the tubes should not be removed if the inflammation were catarrhal in character, the tubes not being occluded. The operation was indicated in cases of uterine myoma to arrest the menstrual function, and he had found that in such cases pyo-salpinx was not infrequently present. If the myoma were sub-mucous, removal of the tubes would not always be beneficial. The operation was never justifiable to relieve dysmenorrhœa, if there were no decided evidence of disease of the tubes; but as a matter of fact he had found that the tubes were usually diseased in such cases. There were many cases in which pain was referred to the region of the tubes and ovaries, which were quite relieved by local treatment. In hystero-epilepsy he believed the operation was rarely curative. He had seen cases in which the operation had been followed by mental depression and other evidences of mental disorder. In three per cent. of his cases menstruation had not been arrested by the operation. In some cases it may be arrested for a few months and then be resumed. He had seen cases in which this function had not been arrested at all. These were cases in which there had been extensive adhesions, and he believed that in tearing these away portions of the ovaries had been left, which retained sufficient vitality to allow the function of menstruation to continue.

Dr. Vanderveer, of Albany, desired to emphasize the statement that if the appendages were removed at all they should be removed thoroughly, no portion of tubal or ovarian tissue being left behind. It was also important to remember that immediate benefit did not result from the operation in all cases. The patients should therefore be encouraged to wait a sufficient length of time before expecting the best results from such an operation.

THE MECHANICAL TREATMENT OF ABORTION.

BY H. W. LONGYEAR, M.D., DETROIT, MICH..

Gynecologist to Hooper Hospital, Physician to the Woman's Hospital, &c.

HAVING nothing new to offer in the way of preventive measures, I propose to confine myself to the consideration of treatment after all means of prevention have been found unavailing.

Who of us has not passed days and hours of anxiety because of these tedious and often dangerous cases? The sudden and urgent summons comes; the young doctor goes, after hastily selecting the necessary appliances; on the way running over in his mind all the means which he has been taught to use, and by the time he has reached the bedside he is ready for action.

He finds the patient three or four months pregnant, weak from the loss of much blood, and still having dangerous hemorrhage. Examination finds the os uteri not sufficiently dilated to admit of the introduction of the finger,—nothing presenting,—pains irregular but weak. Though the patient is much-alarmed, and weak from loss of blood, she is reassured by the doctor, who goes confidently to work. He removes the clots from the vagina, and then proceeds to pack that canal to its utmost extent with cotton tampons, and by the time he has crowded in the last pledget the poor woman feels ready to burst; or, perchance, the same ends, so far as utility, pain, and discomfort are concerned, he attains by the use of the colpeurynter. She is now suffering much more than before, but the doctor tells her that it is the only thing to do to save her life, gives her an opiate, leaves with the consciousness of having done his duty, and, if he has had some previous experience with imperfectly packed vaginæ, feels confident that this time the vagina is filled to its utmost capacity.

In an hour or two, however, doubts on this point begin to oppress him, and he runs in to see his patient, only to find her suffering great pain, notwithstanding the opiate, though not troubled by any more

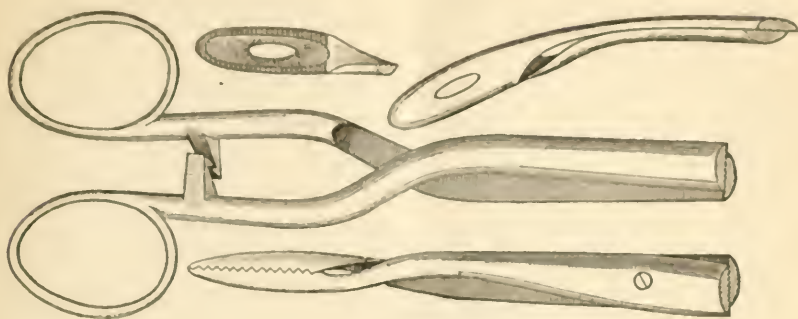
hæmorrhage. , more opiate and more reassurance. In two or three hours hæmorrhage begins again. The tampon is removed and a new one substituted, the os being still too small to admit the finger. The parts have now become excessively tender, but the cotton must be packed more thoroughly than before, in spite of the piteous cries and entreaties of the tortured patient.

This proves effectual, as the flow ceases and the pain increases. Opiate and reassurance again administered. Everything is now going well, although the patient is in great agony, and is becoming somewhat feverish. She is now left for the night, with instructions that the doctor be immediately sent for should hæmorrhage recur.

The *doctor* has a good night's rest, and arises in the morning confident that his patient is safe. He makes his first visit there, and finds everything as he expected. The labor pains have ceased, and hæmorrhage has not recurred. The pledgets are removed, and with the last come the long-looked-for secundines. They are soft, torn, and pulpy; and, as nothing can be felt at the now contracting os, the physician, HOPING that nothing is left behind, washes out the vagina with an anti-septic fluid, evacuates with catheter the distended bladder with its paralyzed sphincter, gives now entire reassurance and something to counteract the bad effect of his opiates upon the secretions, and leaves, congratulating himself that he is through with the worst part of one of those cases which are the *bête-noir* of his practice. It is still necessary, however, for him to visit the patient for several days; and if luck has favored him, and nothing has been left in the uterine cavity, she makes a slow recovery, suffering from weakness and nervous exhaustion, resulting from shock and loss of blood.

The foregoing I consider as by no means an uncommon case, and I am sure that the most of us have had much more severe ones. Now, the question is, *Is it necessary to subject our patients* to the tedious torture — mental as well as physical — of the tampon, or the still more barbarous, though shorter, method of evacuating the uterine cavity with the finger, after sufficient dilatation has taken place? I do not deny that these methods are often useful, and I admit that, in a very few cases of abortion occurring after the fifth month, the tampon might be necessary; but I do object to their use in the majority of cases occurring under the fifth month of gestation as brutal and unscientific, and I maintain that other methods comparatively painless, more scientific, sure to remove ALL the contents of the uterus, and less dangerous, can be substituted. As a means to these ends, and being fully convinced that it is safest for the patient to have the uterine cavity evacuated at the earliest possible moment, after

abortion had become inevitable, I began using, six years ago, the instrument which I here show you.



Since that time I have used it in every case demanding manual treatment, have tamponned but once, and have been obliged to see my patients but two or three times.

Generally, the instrument has been used at the first visit, and another visit has been made the first or second day following, to ensure safety. As a rule, the second visits have not been necessary. The exception was a case of anteversion in a fleshy patient, where it was impossible to use the straight forceps, and I was obliged to resort to other means to remove the secundines. The curved forceps were made afterwards, with which the operator is able to manage cases of flexion or version without difficulty. I prefer the straight instrument, in ordinary cases, as it can be more accurately guided. My method of procedure is very simple. The patient is placed in the lithotomy position across the bed, on which she is lying, (the operator sitting in a chair facing the bed).¹ One index-finger is then passed into the vagina to the os, to serve as a guide to the instrument, which is passed closed into the uterus, then gently opened as far as the uterine walls will permit and gently closed, pressed a little to one (or the other) side of the uterus. If anything is felt within the grasp of the instrument, it is withdrawn and deposited in a vessel placed conveniently near the edge of the bed. The forceps are to be repeatedly inserted and every part of the uterine cavity explored until the removal of every portion of placenta is assured. After this operation, which can be accomplished in from fifteen to thirty minutes, the patient can be confidently assured that the contents of the womb have been entirely removed and that she will have no further trouble.

It is very easy with the instrument to feel the difference between the

¹ It is understood that a thorough cleansing of the external genital and vagina, as well as of the hands and instrument of the operator, with the customary antiseptic solutions, must precede this operation.

firm uterine tissue and that of the softer placenta. The patient should also be instructed to complain, if caused any sharp pain, as from pinching, by the instrument. It is unnecessary either to use force or cause pain, and the patient can be promised a comparatively painless operation.

The instrument is so constructed that the slightest dilatation of the os will allow of its use, its jaws also opening in such a manner, while in the uterus, as not to appreciably enlarge the mouth of the womb. It is not intended that this instrument should be used as the ordinary placenta forceps, — to remove the secundines entire, — although this can occasionally be done; but it is to be used when the os is comparatively undilated and the placenta wholly or in part adherent, or in any case where severe hæmorrhage or other reason demands the immediate evacuation of the uterus.

As illustrating the range of usefulness of this method of treatment, I cite the following cases: —

I. — Mrs. J. B., aged 29, fourth pregnancy, end of second month. The patient lived in the country, and had been having considerable hæmorrhage for two days, and was still losing a good deal of blood, and having occasional slight pains. The internal os was well dilated, and the external to about the diameter of a lead-pencil, through which I could feel the unruptured membranes. It was impossible for me to remain with the patient or see her again for forty-eight hours. So, considering abortion inevitable, I ruptured the membranes with the forceps and removed the contents of the uterus in the manner above described. The placenta was adherent over the greater part of its surface, and had to be removed by grasping small fragments at a time by a gentle twisting motion of the instrument, tearing them from the uterine surface.

The operation occupied about fifteen minutes, after which the uterine cavity and vagina were douched with a bichloride solution (of the strength of 1:6000). All active hæmorrhage and pains having ceased, the patient was left with the simple instructions to remain quietly in bed and take a light diet until my next visit. two days later, when I found her feeling quite well.

II. — Mrs F., aged 38, multipara, two and one-half months pregnant. She had just returned from a trip up the lakes, during which she was suddenly seized with severe pains and hæmorrhage four days previous to my visit, when a mass passed from the vulva, which the attending physician told her was the contents of the womb, and she had been assured that no further trouble would ensue. The flow had continued moderately ever since, with occasional pains. On examination the os was found patulous, but very slightly open, the cervix long, and nothing presenting.

The patient being placed in the proper position, the forceps were introduced and a small mass readily grasped, near the fundus on the left side. It was adherent, was removed piecemeal, and proved to be a fragment of the placenta, weighing about a drachm. The antiseptic douche was used as usual. The patient had no more trouble and made a rapid recovery.

III. — Mrs. S., aged 27, multipara, two months pregnant. She had had some pain and slight hæmorrhage for several days, which had increased somewhat during the previous night. On examination, the uterus was found completely anteverted, the cervix lying up against the sacrum and very difficult to reach. When brought down it was found to be long and hard. Being in doubt concerning the death of the fœtus, and the flow not being dangerous, preventive measures were used for twenty-four hours. At the expiration of this time, the symptoms increasing, it was deemed necessary to empty the uterus. The cervix was now somewhat shorter, but the os was only very slightly dilated. I found it impossible to use the straight forceps without causing the patient a good deal of pain in efforts to keep the displaced uterus in proper position. I therefore had recourse to the curved forceps, and succeeded, with but little difficulty, in emptying the organ in about three-quarters of an hour. This was the most difficult case in which I have used the instrument, the uterus being so much out of position and the patient quite stout.

The cervix in such a case might be held in place by a double tenaculum; but I never have used it, my aim being to operate with the least possible pain and danger to the patient, and the least injury to the parts. A tenaculum is so liable to tear from its position, that a foundation may easily be laid for additional trouble.

This patient had no further pain or hæmorrhage and made a somewhat slow recovery, owing to the existing displacement.

IV. — Mrs. C., aged 36, multipara, five months pregnant. She had just returned from a summer resort, and did not know that she was pregnant, as she had menstruated irregularly for the previous six months. The last menstruation, as she supposed, began two weeks before, and had gradually increased till her return, the day previous to my visit, when regular pains commenced, and during the evening she felt something suddenly pass from the vulva, and sent for me in great alarm, not believing then that she had been pregnant. I found a dead fœtus lying outside the vulva, with cord attached. The uterus was contracting about every five minutes, the os had almost closed, and would contract with each pain. By some effort I could introduce my finger, and felt the edge of the placenta high up in the uterus. She had lost, and was still losing, a good deal of blood; the heart's action was very weak and somewhat irregular. A liberal

quantity of brandy was given and expression thoroughly, though vainly, tried. Having no instrument with me but these forceps, I proceeded with them to remove the placenta, piece by piece, and was able to accomplish its complete removal in a little over half an hour. The uterus and vagina were douched, as usual. The uterus contracted well afterwards, and the patient was comfortable for the remainder of the night, and made an uninterrupted recovery.

V. — Mrs. M., aged 40, multipara, three and one-half months pregnant. I was called in the night and found her lying in bed with her night-dress, a folded sheet, several napkins, and a large part of the bedding drenched in blood. Bleeding was still profuse, pulse rapid and weak, and face blanched. Brandy had already been liberally given, and the patient was immediately placed in position with the head low. The os was sufficiently open to admit the index-finger, and the placenta was felt above the internal os, which was not largely dilated. The placenta was grasped with the forceps, and, by careful manipulation, removed almost entire, only a few fragments remaining, which were easily found and removed. After the use of the antiseptic douche, the patient was cleansed and dried, warm and dry clothing substituted for the wet and soiled, and she was left, within an hour from the beginning of the operation, feeling perfectly comfortable. With the exception of weakness from the loss of blood, she made a rapid recovery.

A REMARKABLE VAGINAL SEPTUM.¹

BY JOHN D. S. DAVIS, M.D., OF BIRMINGHAM, ALABAMA.¹

President Jefferson County Medical Society.

JUNE 4, 1887, I was called to attend Mrs. S., German, aged 21 years, primipara. I found the os dilated one inch in diameter, and the neck of uterus and vagina divided by a continuous broad, thick, double septum. The vaginal wall and that of the septum presented a similar touch and appearance. Ocular examination revealed complete rudimentary external female generative organs completely enclosed within the otherwise normal external generative organs and vagina. See Fig. 1.

The labium majus and minus of the rudimentary pudendum were covered with integuments, and the intra-vaginal extension was mucous and identical in appearance with the surrounding mucous membrane of the vagina — furnished with the transverse ridges (*cristæ*) peculiar to the vagi-

¹ Reported before Jefferson County Medical and Surgical Society.



Fig. 1.



Fig. 2.

[ANTERO-POSTERIOR SECTION.]

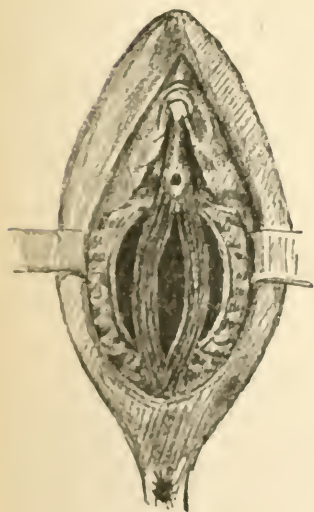


Fig. 3.

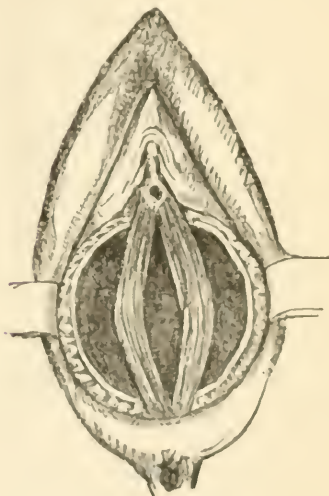


Fig. 4.



Fig. 5.

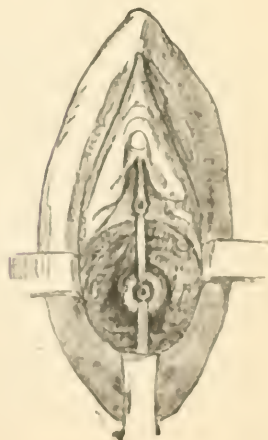


Fig. 6.

nal wall, except the part attached to the neck of the uterus, which part was aponeuratic and fibrous. See Fig. 2. It illustrates the septum completely revealed by dissection or division of the vagina. The membranes had ruptured before my arrival. The condition of the parts, showing the septum slightly on the stretch, and the os very much dilated, may be seen in Fig. 3.

My brother, Dr. W. E. B. Davis, saw the case with me one-half hour later, when the os had completely dilated and the soft parts were placed on the stretch. See Fig. 4.

I separated the superior attachment by means of a long pair of scissors, dividing all along close to the superior or anterior vaginal wall, without hæmorrhage; the inferior attachment was then likewise divided, with hæmorrhage from the mouths of four divided arteries. I applied four hemostatic forceps until delivery of the child was complete, after which I ligated the arteries. The child, male, weighed $6\frac{1}{2}$ pounds, and was perfect in health and form. On the third day a slight fever—temperature 100° —appeared, but subsided in a few hours without treatment. Fig. 5 illustrates the appearance of the vaginal cavity and the neck of the uterus after complete recovery, showing the line of division both in the anterior and posterior vaginal walls, and the anterior and posterior neck of the uterus.

This case is reported on account of the unusual manifestation of nature in creating a double track to one uterus, and in so doing utilizing the same muscles, tissue, and integuments employed in the development and composition of the pudendum and vagina. A dissection of the pathological specimen revealed in the vaginal portion, glands and ridges, identical with that of the normal vaginal tissue; and the rudimentary labia majora and labia minora were found to be composed of integument, areolar tissue, fat, and muscle,—demonstrating clearly that the muscle vaginæ in its return from the sphincter ani, as shown in Fig. 6, split or gave off enough fibers to form a second or inter-vaginal ring.

The lady said, when a girl, she knew that she was not natural and like other girls; but having her sickness regularly and experiencing no inconvenience whatever, she consulted no one about her condition. She followed her lover from Germany to this city to marry him. She enjoyed the nuptial night, with the male organ, on either side of the septum,—experiencing no difference in the sensation. She managed to conceal the true condition from her husband until the day of confinement. He recognized nothing unnatural, save “a bulging down there,” as he expressed it. She told me that in the contraction of the sphincter muscles the abnormal part would contract and become rigid too,—clearly showing that there existed a complete and perfect relation to the sphincter vaginæ and ani, all being rings of the same muscle.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

THURSDAY, FEBRUARY 2, 1888.

THOMAS M. DRYSDALE, M.D., in the chair.

Dr. B. F. BAER presented the specimen and read the report of a "Case of Non-papillary Intra-ligamentous Cyst;" enucleation of the entire tumor in the right broad ligament, but of the lining membrane only of that in the left.

Sessile tumors, whether cystic or solid, are always more or less dreaded by the operator, because of the greater difficulty and danger attending their removal, and also because, in the case of sessile cysts, the result as to the permanent relief of the patient is less certain than where the tumor has a pedicle. Clinically and pathologically, therefore, these cases are of great interest and importance.

Pain and hæmorrhage are the important subjective symptoms. The former is usually present, sometimes in great severity; the latter is at times alarming in the quantity of blood lost, and in the frequency of its recurrence. This is not surprising when we consider the close relation which these tumors sustain to the uterus and to the other pelvic organs and tissues. The wedging and pressure which result from the growth of the tumor in the limited space produce great congestion of the blood-vessels from stasis. The uterus becomes enlarged and softened in consequence, and metrorrhagia follows; but the hæmorrhage is conservative to a certain degree in relieving the distended vessels, probably averting rupture of a vein in the broad ligament or in the tumor. The pain which results from the tension and stretching of the nerves involved is also relieved or modified by the depletion following a free hæmorrhage from the womb. But the flow once started does not always remain within the conservative line: it sometimes becomes uncontrollable and results in acute and serious anemia.

According to Doran, sessile cysts which arise from the hilum of the ovary or from the Wolffian relics in the broad ligament are usually papillomatous; but that non-papillomatous sessile cysts, infiltrating the broad ligament, are not infrequently met with, is shown by the following statement from that author: "In twenty-four cases where I assisted at the operation, sessile cysts infiltrating the broad ligament were removed more or less completely, but their origin could not be ascertained; none of these contained glandular growths, most were multilocular, but papillomatous growths did not exist." (*Tumors of the Ovary, etc.*, p. 68.) Further, the ordinary pedunculated multilocular cyst of the ovary sometimes contains papillomatous growths, the result possibly of stray Wolffian relics. I have presented at least one such specimen to this society, and I have seen others. On the other hand, the multilocular ovarian cyst without papillomatous material has been found, in rare instances, to have invaded the hilum and broad ligament in its growth. Doran records two such cases. He says, "I have seen two cases where a sessile cystic tumor of the ovary was removed, and this proved to be an undoubted case of glandular cystic disease invading the hilum and the broad ligament."

The case which I here report is probably another instance of this pathological anomaly.

Mrs. X. was sent to me by Dr. O. H. Adams, and entered my private hospital in April, 1887. She is 32 years of age, married, and has had three children, the last two (twins) eight years ago. Following her last labor she had puerperal mania which necessitated her confinement in an insane asylum during four months. Four years ago she began to have attacks of sharp pain in the right ovarian region radiating to the groin and down the anterior portion of the thigh. The pain was intermittent in character and cramp-like, lasting hours at a time, and was usually followed by a purulent, fetid discharge from the vagina, which would afford her great relief. At other times the attack would end with a profuse metrorrhagia, which would leave her pale and weak, but free from pain. About two years before coming under my care, she first noticed a "lump" in the right groin (which has gradually increased in size). Some time after, she noticed a similar growth above the left groin. She was considerably emaciated and looked very ill.

Examination revealed a tumor as large as a child's head in the right iliac region and a smaller one in the left ovarian region. The tumors seemed to be fixed in the pelvis and to have a broad base of attachment; they were immovable below but mobile above and semi-fluctuating. Vaginal examination showed them to be so deeply attached in the pelvis and so intimately related to the uterus that I was unable to complete my diagnosis without anæsthesia. The patient was therefore placed in bed and ether administered, when it was found that the uterus was elevated by the tumor on the right side, with which it was connected. There was evident fluctuation, though the tumor was thick-walled and very firm, almost hard. The lower surface occupied the position of the broad ligament at the side of the uterus. The same condition existed at the left side, but to a less degree. I diagnosed sessile cystic disease of both ovaries or broad ligaments, and advised immediate operation, to which the patient gladly consented.

On April 13, 1887, I proceeded to operate, being kindly assisted by my friend Dr. Daniel Longaker. When the tumors were exposed they were found to be so closely connected with the womb that they seemed to be one with that organ, which rested as a wedge between them. The Fallopian tubes extended outward over the upper surface of the tumors, while the broad ligaments and the greatly distended veins of the pampiniform plexuses were expanded so as to apparently envelop them, the whole presenting a dark purple appearance, which was not at all reassuring. After separating some slight adhesions on the posterior aspect of the larger tumor and rolling it forward, the nacreous surface common to the multilocular ovarian cyst was exposed to view. Selecting a spot on this free surface because it was less vascular, I now plunged a trocar into it, when about two pints of a tarry-looking fluid drained away. A more thorough investigation, which the diminished size of the tumor now afforded, showed it to be adherent to the cæcum also. Previous to beginning the enucleation, I passed a long, blunt needle charged with a double ligature through the expanded broad ligament at its least vascular portion between the uterus and the tumor, and as far below the Fallopian tubes as could be done with safety. One side of the ligature was then drawn up and tied close to the uterus, including within its grasp the tube and vessels. Thus insured against hæmorrhage from that source, I now cut through as far as the ligation extended and continued the enucleation down to the base of the tumor, and then outward, finally

separating it from the head of the colon. There was some bleeding from the numerous veins which were broken, but this was readily controlled by catch-forceps and ligatures.

Attention was now given to the tumor on the left side. This was found to be deeply imbedded in the pelvis and firmly fixed to the uterus, Fallopian tube, descending colon, and rectum. The upper surface was covered with a network of distended veins, some of them as large as a quill. Enucleation of this tumor seemed too hazardous, and hysteriotomy was out of the question, for to do the latter the tumor must first be dissected from the colon and the pelvis floor, which was not practicable. I determined, therefore, to evacuate the contents of the cyst by aspiration and then to shell out the lining membrane, or, failing in this, to insert a drainage-tube into it. But while endeavoring to find a position for puncture my finger passed into the tumor low down on the posterior border of the broad ligament. Instantly the parts were flooded with a tar-like semi-fluid substance similar to that which had been evacuated from the cyst on the right side. This was removed as quickly as possible by sponging. I then passed my finger through the opening which I had thus accidentally made, and, after a careful and gentle dissection, succeeded in removing the entire secreting surface of the cyst. Blood was now flowing from the small valvular opening in the broad ligament, but, as it was apparently venous, I hoped to check it by compressing the now flaccid folds of the broad ligament; for this purpose several large sponges were inserted and external pressure made upon them while the abdominal sutures were being placed. The sponges were then removed. There was still a slight flow of blood, but, as it was doubtless only a venous oozing, I concluded to close the wound and trust to pressure and the drainage-tube. The patient was placed in bed and the tube carefully watched. During the next two or three hours several teaspoonsful of quite bloody serum passed through it: after forty-eight hours the tube was removed.

This patient made a slow but good recovery, and went home six weeks after the operation. She has been entirely relieved of her former sufferings, and the loss of weight and strength has been regained.

Dr. WILLIAM GOODELL reported a case of splenectomy. Mrs. R., age 40, had chills and fever in early life, but after her marriage, eighteen years ago, she removed to a healthy country town and had no return of the disease. She has had two children, the youngest seven years ago. At this labor she had a serious flooding, and was confined to her bed for six months from excessive prostration. Since that time she has never been well, being weak and miserable. Her monthly periods were always free and generally painful. Last March she had a very severe attack of what her physicians called malarial fever, and her life was threatened by repeated attacks of hæmatemesis and hæmoptysis. A sore tumor was now discovered which was pronounced to be a uterine fibroid, and she was sent to Dr. Goodell. He found the womb pushed low down and retroverted by a solid tumor, which started from the region of the right ovary and ran diagonally towards the splenic region. It entered the pelvis so low down as to cause bulging of the anterior wall of the vagina. The womb seemed to be independent of the tumor, for the former could be moved about freely with the sound. Yet, when the tumor was pushed upwards, it conveyed motion to the womb, drawing it also upwards. The tumor was never free from pain, and the complexion

of the woman was markedly cachetic. The diagnosis was made sarcoma either of the right ovary or of the omentum.

At the operation a very long incision was needed, reaching not quite up to the ensiform cartilage. The tumor was of a dark purple color, and was attached in every direction by very long, tortuous, and wholly denuded vessels, which looked like the largest earth-worms, and were of analogous length. Most of the vessels came from the omentum, which had disappeared apparently by being incorporated with the tumor and by having its connective tissue and fat removed by absorption, leaving the blood-vessels bare. These vessels were either single or else grouped in large bundles, and had all to be ligated. By them the tumor had evidently been nourished, for what looked like a pedicle was slender, long, and twisted. It was lost in such a mass of livid veins that Dr. Goodell did not dare follow it up to its source. His diagnosis had been sarcoma of the omentum, but he was so uncertain of it that he sent the specimen to Dr. Formad, who pronounced it a leukæmic spleen. It weighed not quite six pounds. The woman did well for four days, then symptoms of embolism set in, the sputa became streaked with blood, and she died on the sixth day. So far as he can learn from the literature on the subject, his case made the eighteenth in which a leukæmic spleen had been extirpated, and all had died save one.

Dr. HARRIS said that the case of recovery after operation for removal of a leukæmic spleen, spoken of by Dr. Goodell, had occurred under Dr. Franzolini, of Medina, in north-eastern Italy. The proportion of leucocytes was small, which probably accounted for the recovery of the patient. The diagnosis had been made before the operation.

Dr. PARISH had a few years ago seen a case of the late Dr. Wallace in which a diagnosis of fibroid of the uterus had been made. A tumor the size of the two fists was found near the side of the uterus. The patient developed peritonitis, and was tapped by the assistant physician; some dark fluid was withdrawn. Death took place a few months after, the peritonitis having been cured. At the autopsy the spleen was found adherent to the uterus and to the pelvic brim.

Dr. GOODELL called attention to the hæmoptysis and hæmatemesis in his case, which were the usual symptoms of a leukæmic spleen; but he had not been informed of them until after the operation had been performed, and therefore he did not have that clue towards forming a diagnosis. Dr. Goodell also exhibited two dermoid cysts, which he had on that day removed from a young girl, aged 16 years. He had brought the specimens down because the largest one contained daughter-cysts, or at least round bodies resembling them; yet he had hitherto found that all dermoid cysts which he had removed were single-chambered and did not contain smaller cysts.

Dr. HAMILL exhibited a uterus removed from a woman in the last month of pregnancy. As the opportunity is not often afforded to examine the uterus at an advanced period of pregnancy, and as this particular specimen presents several well-marked and interesting features, I felt that it would be of interest to place it before the society. The uterus was removed about twenty-four hours after death; inasmuch as I was present at that hour, I wished to do so immediately, but could not secure the consent of the family. I shall very briefly call attention to the several conditions noticed. The outer surface of the uterus is studded in many places with syphilitic

nodes. The woman had contracted syphilis early in her married life, and manifested other marked symptoms of the disease. There is also a small cyst of the broad ligament. The specimen presents quite markedly the contraction ring or ring of Bandl. I give both designations advisedly, inasmuch as it is not definitely determined whether this ring represents the internal os, as Bandl claims, or whether it marks the boundary between the upper and lower uterine segment, as Schroeder believed. According to the investigations of McDonald, Müller, Säger, and Lusk, this condition does not always exist. In three autopsies made by Lusk he failed to find any trace of Bandl's ring. Schroeder, in a frozen specimen, found this ring very distinctly, but claimed that it was the dividing line between the upper and lower uterine segment. Bandl holds the contraction ring of Schroeder to be the true internal os, and consequently one would expect to find below this ring cervical mucous membrane, whereas the portion between Bandl and Müller's ring is covered by decidua; Bandl explains this by his three hypotheses: *First*, The deciduous membrane is crowded down into the cervix by the weight of the presenting part. *Second*, In primiparae the advancing head strips off the mucous membrane, which is replaced by decidua. *Third*, That the cervical mucous membrane is transformed into decidual membrane during pregnancy.

Another interesting feature, that the specimen demonstrates beautifully, is that condition pointed out by Leopold and Lusk as seen in their Cæsarian sections, viz., the delicate filamentous bands running from the chorion to the decidua, which are the atrophied villi of the chorion. The attachment of the placenta is to the posterior wall of the uterus.

Dr. HIRSH had seen the frozen section made by Schroeder in 1884, and it was most interesting, showing distinctly the so-called ring of Bandl. He did not believe in any one of Bandl's three hypotheses to account for decidual membrane in a place where, according to Bandl's theory, cervical mucous membrane should be found. The extraordinary diversity in the explanations advanced by Bandl shows plainly enough the insufficient ground upon which his theory rests.

Dr. M. PRICE firmly believed in hunting for anatomical facts upon the living subject. He had looked for Bandl's ring, and had never been able to find that it existed. He is fond of turning in badly presenting children, and has had his hand in the uterus many times. He has had it so compressed that it was useless for some moments; the compression was always uniform and from all directions. He has yet to find any constriction in the region of the so-called Bandl's ring alone. He has in several cases observed hour-glass contractions, but this was due to continued pressure on one side of the uterus and consequent loss of contractility of that portion. He does not believe that hour-glass contraction ever occurs in uncomplicated labor.

Dr. PARISH remarked that in a Cæsarian section performed by Dr. Foster, of Maine, the operator had observed a circular contraction. This went to prove that such a thing could occur. In two cases of Cæsarian section performed by himself no such contraction had existed; and likewise there was no such circular contraction in the third case operated on by Dr. Allis and himself.

Dr. LATHES stated that in discussions before the society in October, 1879, in December, 1879, and in October, 1880, upon the subject of "Hour-glass Contractions

of the Uterus," Dr. Albert H. Smith, Dr. R. T. Curtin, and Dr. W. H. Parish had reported instances of prolonged and forcible contraction of a ring of muscular fibre in the uterus, above the internal os, the lower and upper segments of the uterus remaining flaccid. In Dr. Curtin's case, Cæsarian section was being performed; the uterus had not been emptied of its contents, and the ring of contraction was seen as well as felt. In the other cases a placenta or a twin fœtus was retained in the upper segment of the uterus. May not this ring of muscular fibres, so contracting, be identical with that described by Bandl? In the case reported by A. H. Smith the condition lasted for two hours, and was relieved by hot water inter-uterine injection. The doctor reported the point of contraction as being at the internal os, but, as he was opposed to the idea of there being any such thing as a contracting ring higher up, we may make some allowance and consider that it occupied a position near that described by Bandl as the location of the contraction band.

Dr. R. STEWART had seen a case in which, after the child was removed, the patient began to show signs of internal hæmorrhage. The uterus was examined and found to be much distended. An attempt was made to pass the hand in, but it was done only with difficulty, as there was a powerful contraction in the lower segment. The body was found distended and very flaccid, and filled with blood. He thought that the case proved that a contraction could occur in the lower segment.

Dr. HIRST quite agreed with Dr. Price in thinking that these cases always arose from pressure. He had seen good examples of Schroeder's contraction ring in which the ring marked the dividing line between the upper and lower segments of the uterus, and was not at all due, as might be inferred from some of the preceding remarks, to contraction of the circular muscular fibres, but was merely the sharply defined boundary between the upper, thicker, and more muscular portion of the uterus and the lower, thinner, more fibrous portion above the true internal os.

Dr. HAMILL observed that the patient had formerly suffered from Graves disease, but had no active symptoms at the time of death. She had died of heart failure. Dr. Hamill presented also a "four-weeks' ovum" entire, with the deciduæ. He presented this specimen for a twofold reason: *First*, on account of its comparative rarity; and *second*, to elicit from the members of the society their views on the after-treatment of abortion. The expulsion of the deciduæ vera is not, as a rule, thrown off with the ovum entirely. Dürnsen says: "From a personal experience with more than 150 cases of abortion in the service of the charity of Berlin, the retention of portions of the deciduæ vera is not the exception, but the rule;" and Farnier says "that ordinarily the uterine deciduæ remains adherent to the uterus." Whether it is safer to leave this in the uterus and allow nature to throw it off, or to remove it at once, is the particular point I should like to hear the members discuss. For my own part, I feel sure that it should be immediately removed. As to the manner, I shall say nothing.

Dr. HIRST said that when the deciduæ vera is retained, as is the rule in early abortions, one of two things happened: the mass either putrefied and thus became a source of septic infection, or it became greatly thickened and remained as a foreign body, exciting frequent hæmorrhage or constant leucorrhœa. He always cleaned away any débris left in the uterus after abortion.

Dr. GOODELL agreed fully with Dr. Hirst as to the propriety of removing the

retained fragments of the placenta or the membranes; but he had a word to say about the manner of their removal. He deemed the much-vaunted curette, whether sharp or blunt, a very inferior instrument, especially so whenever the fragments had been retained for several weeks. Not only did the curette bruise and injure the unimplicated portion of the womb, but it tended to glide over the fragment, merely scraping its surface. Sometimes, indeed, it would hook up one end of the fragment, and, after causing a great and needless flow of blood, would slip off. So often had he been disappointed with it, nay, even alarmed by the great loss of blood, that he now uses either a small fenestrated polypus forceps, when the os was dilated enough to admit it, or a slender-handled catch-forceps. With these instruments the fragment was invariably seized and removed by a twisting movement, while the womb itself sustained no injury whatever. It was, in fact, safer to use these instruments in the womb than to catch a stone in the bladder with the lithotrite.

Dr. PARISH had seen a number of mistakes made with the curette. He had been called to a case, and found a woman who had been bleeding for four or five months. Her former attendant had curetted and pronounced the womb empty. He and his colleague dilated and removed a body as large as his two fingers. In another case the uterus was curetted by the attending physician and pronounced empty. Within twenty-four hours the patient aborted. These cases well illustrate how one may be deceived as to when the uterus is empty, when relying on the curette. In his own practice, after three months, if there is retention he introduces his finger and delivers everything. He thinks, with Dr. Goodell, that something more reliable than the curette must be used to enable one to say that the uterus is empty after abortions, in doubtful cases.

Dr. LONGAKER does not interfere before the third month at all, unless the patient has decided signs of retention, — such as hæmorrhage, patulous os, etc.; otherwise it is, as a rule, safe to conclude that everything has come away. During the third, fourth, and fifth months retention is very frequent. He thought it surprising what a small portion of placenta would give serious trouble; even small shreds will keep up a very serious hæmorrhage. He always removes anything which has been retained, and uses the finger, and very frequently anæsthetizes the patient.

Dr. R. STEWART asked the members of the society in what proportion of cases they have to interfere. He has never used the curette for this purpose, and has never failed to remove with forceps of proper size. The hæmorrhage generally ceases in from twelve to thirteen hours; if not, he investigates, and usually finds some débris left behind; but is convinced that, if there has been no improper interference at the time of the abortion, such cases are exceedingly rare. He agrees with Dr. Longaker as to the amount of trouble kept up by small pieces of membrane, etc.

Dr. HAMIL also presented a "fœtus" showing intra-uterine rachitis.

This specimen presents a number of anomalies; probably the one most rare is the condition of intra-uterine rachitis. You will note the marked rachitic condition of both femurs; so far as I am able to find, fifty-three cases having been collected by Schoelan and Græfe. This condition of the bones in rachitis may be simulated by the arrest of bony development in those cases of fœtal cretinism occasionally met with in Europe. The absence of the three fingers and corresponding metacarpal bones would, following the classification of Geoffrey St. Hilaire, place this among

the hemiteratic class, and the subdivision of that class known as anomalies by numerical diminution. This form of monstrosity is not met with very frequently. The absence of the fibulæ renders the specimen still more rare.

Dr. J. PRICE exhibited a piece of the large intestine, which had been removed that day by Dr. Charles B. Penrose. The patient, a woman, had not had a passage of the bowels for twenty-eight days. There was enormous distention. The constriction was easily found on the right side of the uterus and posterior. The intestine was punctured and a gallon or more of fæces removed. The gut was then resected, a piece twelve inches long being removed. The two ends of the gut were then united in half their circumference and the other half stitched to the abdominal opening, making an artificial anus. Dr. Agnew had seen the case and had recommended immediate operation. The woman was a patient of Dr. Bernardy's. She is now doing well. He believed that Mr. Tait had first advised the preliminary puncture to relieve the distention in conditions that cannot be dealt with by resection. He had some letters from Dr. McMurtry, of Danville, Ky., who had been called forty-five miles into the country to see a physician 26 years old. On opening the abdomen he found two perforating ulcers of the cæcum with local peritonitis. He had trimmed the edges of the ulcers and closed with Lembert sutures; irrigation and drainage. On the fourth day, pulse 92, temperature 99°, and patient had complete evacuation of bowels.

Dr. PRICE also exhibited a "pelvic-bound fibroid."

Woman 37 years, small. Tumor on anterior face of pelvic-bound fibroid could almost be picked up through the abdominal walls. The R. tube contained blood, and the ovary was bound down by adhesions. The R. tube and ovary were then tied off, but the L. tube and ovary were so embedded in a mass of large venous sinuses that it would have been dangerous to have interfered with the ovary. The tube was removed. A clamp was passed around the tumor, which had been lifted out of the abdomen, and the mass was removed. The clamp came off on the 17th day. Temperature was never below 100°, pulse above 65. In connection with this case he remarked that tubal and ovarian trouble complicating fibroids was very common. Dr. Keith had found all the tubes diseased in about all his first thirty-eight cases of hysterectomy. In nine cases he had attempted to remove them, but had failed, and finished by hysterectomy. He was surprised to find Dr. Keith condemning the operation, and thought that his statistics explained the matter. His mortality in private practice was less than four per cent., and in public practice more than fifteen per cent. Dr. Price further exhibited the drainage-tubes used by Dr. Bantock, of London, as well as a tube for continuous irrigation, which Dr. C. B. Penrose had just handed him. He also showed Tait's modification of Kæberle's wire clamp and the delta metal wires now used by Dr. Bantock.

Dr. HIRST exhibited "the incubator," in use at the Maternity Hospital. It is a simplified Crede's incubator, a double-walled bath-tub made of copper; hot water is poured into the space between the walls, and the temperature maintained within the tub of nearly 100° Fahr.

Also the "system of Gavage," in use at the same hospital; it consists in forcing into the child's stomach through a soft-rubber catheter, by means of a small glass syringe, about 1½ dr. of human milk every hour. A table showing the weight of a

premature infant, born at the two hundred and sixteenth day, and treated by the method, was presented; the child weighed at first 1,080 grammes; at the end of the first month the weight was 1,460 grammes. Farnier, instead of a syringe, uses a glass funnel in this treatment.

An instrument for measuring the obliquity of the female pelvis. It was a simplification of Vernier's instrument, a picture of which may be seen in Witkowski's "History of Obstetrics." He related the history of a difficult breech extraction, the difficulty being solely owing to the abnormal inclination of the pelvis; the plane of the superior strait was almost vertical as the woman stood erect.

He further exhibited a specimen from a case of "post-natal pneumonia," which contrasted well with the case of pre-natal pneumonia exhibited at a former meeting. The pneumonia in this case was caused by the inspiration of blood, liquor amnii, and mucus during labor, which was a very tedious one. The pneumonic consolidation could be found in spots about the size of a chestnut, throughout both lungs. The child developed fever, temperature 103° , directly after birth, and died on the third day.

He finally presented "a double monstrosity," two immature fœtuses, about the third month, intimately joined by a complete fusion of the anterior abdominal walls; there appeared to be no bony junction whatever. Both fœtuses were male. There was a common umbilical cord given off from a flap of skin stretched between the most dependent portion of the abdomens.

Dr. B. F. BAER presented specimens of inflammatory tubal trouble. The first, a woman 24 years old, who had had severe hæmorrhages for two years past, and was reduced to an almost bloodless condition. She was treated for three months in a hospital by the usual methods, with no relief. The operation proved the diagnosis. Both ovaries were removed. The fimbriated extremity of the tubes was lost in the ovaries. She made a good recovery, and he thought the cure permanent.

The second case was that of a woman 29 years old. She was confined to bed with a pelvic peritonitis and a bad hæmorrhage. She had had recurrent attacks of this kind, and had almost lost her life thereby. A tampon controlled the hæmorrhage for a time, but when it was removed the bleeding returned. During the operation he was compelled to catch the ovaries with a pair of small forceps, in order to tear them away from their adhesions. The left ovary contained a small fibroid, which had been the seat of much pain between menstrual periods. There was no pus in the tubes. He had never seen pus in the tubes in any of his cases. They were simply thickened and adherent. He did not think that pus was ever contained primarily in the tubes.

Dr. DEEVER then showed some pus tubes. In the first one, on rectal examination, a tumor could be felt, but he was uncertain whether it was in the rectal walls or in the abdominal cavity. By vaginal examination he discovered a prolapsed ovary. He found on operation that the right ovary was displaced and adherent to the pelvic floor. The left ovary was adherent to the rectum. The patient had been discharging purulent matter from the rectum. She was undoubtedly syphilitic, which he thought accounted for the discharge, which still kept up. She had been a sufferer for two years or more. She had been treated by several physicians for stricture of the rectum. After the passage of bougies, pus and blood would ooze from the rectum; finally the bougies caused so much pain that they had to be dispensed with.

The second case, a young female. She had been seen by an eminent physician, and he had pronounced the trouble an old cellulitis which had not yet undergone resolution. She had recently had another attack; the pain was decidedly that of suppuration. Vaginal examination revealed a mass which fluctuated very slightly. On opening the abdomen the right ovary was found to contain a good-sized cyst, the tube contained pus, and there was besides a blood-cyst. On the left side there was a cyst of the broad ligament and a large pus-tube. Both cyst and tube were ruptured in removal. Two drainage-tubes were inserted. Temperature reached 101° ; stitches are not yet out; tubes out in fifty-two hours. The tubes were kept dry and clean with a cotton rope. No discharge after removal of tubes. One point I wish to make is, that pelvic surgery is very delicate work—there is great danger from the nearness of the great vessels and ureters as well as the bowels. There is great danger of tearing the bowels in separating adhesions.

Dr. PARISH had had an operation ten days ago. Great emaciation; in bed six weeks, high temperature, of phthisical family; married ten months. Prior to taking to bed had had tubal trouble: physician recognized mass appearing above pelvis. When he saw her the tumor rose above the umbilicus: difficult micturition and defecation. He made a median incision, so as to explore the pelvis; he passed his finger into the pelvis, but could not make out the exact condition. The tumor, as well as he could make out, was an abscess, but there was no fluctuation. He then made another incision above Poupart's ligament and opened and drained the abscess, not opening from it into the peritoneal cavity. He now enlarged the median incision and found the uterus involved in the mass. He believed that pyosalpinx was the original cause, for on the other side there was a large pus-tube and ovary, but without adhesion. Pus escaped from the tube in removing. Deep in the pelvis, to the right of and behind the uterus, was a tumor as big as two fists: walls very thin; no connection with the ovary, tube, or parovarium. He introduced a trocar and emptied the sac of a pint of clear spring-like fluid: the cyst collapsed and could not afterward be found. Drainage-tube was put in: patient has done well; pulse and temperature soon becoming and remaining normal. Pus usually does not exist primarily in the tubes, he believed, but the infection commenced in the uterus and extended to the tube, which then had both ends sealed and thus formed a pus-sac. Abscess of the ovary, he thought, was usually secondary to the pus in the tube.

Dr. J. PRICE said that the statement had been made at the last meeting that pelvic surgery in pus cases was child's play in comparison to surgery of broad-ligament cysts. He would himself reverse that statement. In regard to Dr. Baer's not finding pus in the tube, he would say that Dr. Gross had reported a case where a pint or more of pus was found in a tube. Pus did, beyond doubt, exist in tubes. He had had a number of cases where the pus had poured out through the uterus while removing them. Dr. Deaver's cases were exceedingly interesting on account of the mixed character of the lesions, pus-tubes, small ovarian, and broad-ligament cysts coexisting. The cyst, which had collapsed in Dr. Parish's case in the tapping, he believed was one of the broad-ligament, — just such cases as Keith tapped, and said never returned, but always got well. Dr. Deaver's case, treated for stricture, had no stricture, excepting that caused by pressure of the diseased appendages and inflammatory bands constricting the bowels. The cases Dr. Baer reported are cases of

caseous degeneration, and do not often contain pus. If Dr. BAER continued to do pelvic surgery, he would soon come across some pure pus cases, and would probably find them sufficiently charged with pure pus to deluge the peritoneal cavity.

Dr. BAER did not believe that pus existed in the tubes primarily, but that it always started in the pelvic connective tissue, and had been formerly called pelvic abscess, — which term seemed now to have died out of existence. The tubes exhibited by Dr. Deaver did not now contain pus. He was still of the opinion that surgery of broad-ligament cysts was much more difficult than the removal of pus-tubes.

Dr. DEAVER said that the tubes which he exhibited did most unmistakably contain laudable pus, but that it had been discharged by the handling. He did not see how pus in the broad ligament could get into the uterus without ulcerating through either the uterus or the tube. His was undoubtedly an abscess of the tube, pure and simple. As to the difficulty of surgery of broad-ligament cysts and pus-tubes, he considered that of the tubes the most difficult. In the broad-ligament cysts you had almost all your anatomical points defined, and there was, as a rule, no inflammatory complications. In dealing with the Fallopian tubes, on the other hand, owing to their displacement and the adhesions bringing them to the pelvic floor, or perhaps adherent to the ureters, vaginal, and hæmorrhoidal plexus of veins, the intestines and bladder, we may encounter one of the most difficult cases in surgery to deal with.

J. M. BALDY,

Secretary.

THE DETROIT GYNÆCOLOGICAL SOCIETY.

STATED MEETING, NOVEMBER 2, 1887.

THE Society met at the office of Dr. MANTON, the President, Dr. E. W. JENKS occupying the chair.

Written Communications.

Dr. F. W. MANN read his inaugural thesis, the subject being "An Old Midwife."

A wealth of unexplored experience would be revealed, if an hour or two of the time now daily frittered on the ephemeral literature of the day were devoted to a review of the mediæval authors of the past. Our attention was recently attracted to an old French book, published in Paris in 1626, bearing the following title: "Various Observations on Sterility, Impotence, Lyings-in, and Ailments of women and newly-born children fully treated and successfully practised by Bourgeois, called Bousier, midwife to the Queen. A useful and needful work for every one. Dedicated to the Queen."¹

¹ Observations diverses sur la stérilité, perte de fruit, fécondité, accouchements, et maladies des femmes et enfants nouveaux naiz amplement traités et heureusement practiqués par L. Bourgeois, dite Bousier, Sage Femme de la Reine. Œuvre utile et nécessaire à toutes personnes. Dedie à la Reine. À Paris. Chez Melchior, etc., 1626.

Justice does not always characterize the judgments of posterity. This little book is a classic. It is the first book on midwifery written by a woman, a fact which alone entitles it to perennial fame. It deserves to be rescued from ill-merited oblivion. Written nearly 300 years ago, in its quaint old French, it exercises a potent fascination over its reader. It is full of startling and refreshing surprises, and affords such a vivid and picturesque glimpse of mediæval and obstetrical practices at that time, that we cannot refrain from reproducing the substance of a few of these "Observations."

Louise Bousier's "Observations" were written amidst circumstances of unusual historic interest. The times were full of mental disquietude and scientific unrest. The popular mind was agitated by theological problems of intense signification. Ambrose Paré was writing his great work, and performing his great surgical operations. Among the assistants of Ambrose Paré was a surgeon named Bousier, and to him Louise Bousier had been married. It was probably this circumstance, combined with her husband's ill-fortune, which induced her to become a midwife.

The "Observations" are divided into three books, dealing with different phases of the puerperal state. They comprise a full account of the birth of the "children of France,"—the offspring of Henry IV.,—from which we derive our best impressions of Madame Bousier's character. Remedies are given for all the ailments incidental to pregnancy. The third book is entitled "Advice to my Daughter," who followed her mother's profession. There are, too, the usual grist of stories of the marvellous and prodigious, with which she doubtless beguiled the lying-in-woman.

The reader is surprised at the information acquired by the celebrated midwife. We may wreathe a passing smile at her antique remedies, and be forgiven a little scepticism as to the curative value of rose-water and white of egg applied externally for prolapsus uteri, or doubt the efficacy of a plaster composed of powdered corals, dragon's blood, yellow amber, and nutgalls as a preventive of abortion. Our own therapeutics is sometimes somewhat grotesque, though its feebleness be disguised under an inscrutable pharmacy.

Madame Bousier recognizes and fully describes twelve different presentations. On the vomiting of pregnancy she recognized its mechanical character, and for its prevention advises that a large ivory plate be bandaged tightly over the stomach. In placenta previa, she advocates the induction of labor, recommending that the membranes be ruptured and the child baptized in utero. She is a good believer in a wine bath for the child after delivery, and urges the employment of authorized midwives on the ground that they alone know how to shape the infant's nose and head. Obstetricians are familiar with the essential ritual of the funis umbilici,—a hole must be *burnt* in piece of linen, and the cord passed through it and laid *upwards* on the abdomen. Louise Bousier says it must be laid upwards, and not downwards, to prevent hæmorrhage, should the ligature slip.

When Louise Bousier began her duties as a midwife she first tried her hand on the poor. Being successful, she desired to enter the guild of midwives, that she might be entitled to practise among the wealthier classes. To do this she had to be endorsed by one physician, two surgeons, and two midwives. She sought the signature of two ladies, Mesdames Peronue and Depuis, the latter of whom was

accoucheur to the Queen. This lady opposed the entrance of Louise into the profession, and in a disputatious interview Louise was so threatened and terrified that she says, "My milk soured and I lost a beautiful sucking babe." Madame Depuis at length reluctantly signed her diploma, and she entered upon the full privileges of her profession.

Madame Depuis was destined, at a later date, to pay dearly for her opposition to Madame Bousier. Henry IV. had been divorced from Margaret of Valois, and having recently married Marie de Medici, France was eagerly awaiting an heir to the French throne. Marie de Medici was self-willed and opinionated, persistently refusing the services of Madame Depuis in her coming *accouchement*. The question of the hour was, who was to deliver the Queen in her coming travail.

Louise Bousier had friends at court, and mainly owing to the efforts of M. du Laurens, physician to the King, after an amount of lobbying and intrigue which would have won certain honor to a modern politician, she was finally installed midwife to the Queen of France. Madame Depuis had been supplemented by the woman she had abused, and it was her turn to have her milk soured.

Before the Queen's lying-in, the time of our midwife was occupied in daily assuring her majesty "it would be a boy," and by relieving, in similar strain, the doubts of her anxious spouse. The King, overhearing one of these conversations with the Queen, said, "Fie on thee, midwife! be the child a boy, thou canst not hold the good news to thyself, but must needs proclaim it lustily, for no woman *could* be silent;" but the midwife explained that, as emotions of joy or sorrow are injurious to the newly delivered, neither by voice nor gesture should she betray any sign.

One evening Louise was suddenly summoned to the royal presence, and the King said, "Come, come, midwife, and see if my wife be in travail: she hath great pain." The midwife assured the King it was even so. The King then told the Queen that it was usual in France for all the princes of the blood-royal to be present at a royal labor, and asked her permission to this embarrassing custom. This was probably a political precaution against subsequent impugnement of the legitimacy.

It being decided that labor had commenced, the Queen was conducted to a magnificent chamber, where the bed of travail and the chair of travail, both covered with gold-embroidered crimson velvet, were prepared. The Queen occupied the bed and labor proceeded. The midwife, noticing the Queen repressed her cries, told her not to do so, "lest her throat should swell," and the King reiterated the advice by exhorting the Queen to "cry out lest thy throat should swell." Later the Queen was placed on the chair of travail, opposite which the royal princes sat on stools, and the young Dauphin, afterward destined to be his Most Christian Majesty Louis XIII., was born. Then followed a period of great excitement, the story of which is narrated by Louise in her own quaint and inimitable style. Was the child a boy? Was France, after being nearly a century without one, the possessor of a long-desired Dauphin? The self-contained midwife manifested no sign, but one of the court ladies, receiving from her a secret signal, glided gently to the King and said, "It's a boy." The King, regarding the midwife sceptically, said, "She is too calm for that to be." On approaching her, he was nevertheless confirmed in his brightest hopes.

In his ecstasy of delight the King yielded to ill-considered impulses, and throw-

ing open the doors of the chamber admitted about two hundred people, who, in their joy, indulged in indiscriminate embraces and congratulations.

Madame Bousier protested in behalf of her patient, who had not yet been put to bed, but was promptly answered by the King: "Be silent, midwife, and fume not, for this babe belongs to all the world, and everybody must needs rejoice thereat."

The Queen was with difficulty put to bed, and it may be interesting to ascertain what treatment she received at the hands of this celebrated midwife. We find the details of this scattered throughout her book. The Queen had experienced a tedious labor, lasting twenty-two hours, and in such cases Louise advises that "a black sheep be flayed alive and the warm fleece applied to the woman's loins—this strengthens them greatly. Then procure a hare: after flaying it, cut its throat and allow the blood to flow into the skin. Apply this while hot to the woman's abdomen. This constricts the parts, prevents the accumulation of melancholic to unite in the blood, and dissipates the vapors." The midwife very highly recommends these methods for general adoption for all who practise midwifery.

Immediately after labor she administered to primiparæ a concoction known as "Queen's powder," as a preventive of after-pains. Not only did a dose of this powder relieve all present suffering, but secured the patient complete immunity from all after-pains at any subsequent labor. Marie de Medici never suffered in this respect, and many other distinguished ladies testify to the efficacy of the remedy. As modern obstetricians have not found any remedy possessing these qualifications, the formula may prove useful. We find it at page 117.

℞ Comfrey (racine de grand consolide)	3i
Peach kernels.	
Nutmegs grated, aa	3ii
Yellow amber	S ss
Ambergris	dr x
M. Lez. A teaspoonful in wine or broth.	

After these remedies have been taken and the reeking skins removed, the midwife brings herself into agreeable harmony with modern midwives for the precision with which she instructs that "the woman should now be bound with a long napkin."

Louise Bousier attended Marie de Medici in all her subsequent labors, the details of each being given in a chatty and piquant style, affording a green-room glimpse of the great court personages and customs of the day, highly entertaining, and no doubt truthful.

The birth of the second son of Henry IV., the Duke of Orleans, was attended by a little incident worth recording, for it shows that Louise Bousier, eminent as was her ability, had dangerous rivals, the perfidious man-midwife already darkening the obstetrical horizon. The Queen was suffering in dystocia; it was a foot presentation, and the King, sending for Louise, said: "Midwife, I know thou esteemest the life of my wife and child dearer than thine own, but should dangers present themselves, there is here *this man of Paris who delivers women*; we have him in the grand closet." When the Duke of Orleans was born, Madame Bousier's triumph and success were complete, great rejoicings ensued, and Louise tells us, this man-midwife, M. Honoré, was never again invited to a royal *accouchement*.

It would prove irksome to follow this midwife through all the pages of her book. Some would have to be expunged as unsuitable for presentation, although it must in justice be conceded that Louise's writings are far more antiseptic than contemporaneous literature generally. She is garrulous, but not like him of whom Master Holofernes said, "He draweth out the thread of his verbosity finer than the staple of his argument." She loved the marvellous, and is minute in her descriptions of the incredible. It was an age when mankind breathed easily in the air of the supernatural unaffected by the scepticism of modern days. In obstetrical stories, in "*histoires remarquables*," she could always "go you one better," and we may readily believe her experiences would equal in point of piquancy those of "the man of Paris who delivers women." Had she not delivered a petrified infant? Had she not attended a woman nine days in labor and seen another eleven months pregnant? She simply overflows with professional narratives. She records precocious menstruation in a child eight days old, and vouches for having seen the same phenomenon in two old women over eighty. She grandly tells us of a woman who going to church one cold Christmas morning, and her unborn infant getting the colic, she suddenly became conscious of the extra-uterine descent of the hand and arm. She quickly repaired home and heat was applied to the uterus externally. The child, feeling the heat grateful, withdrew the protruded arm, and the woman went on to full term and was delivered the following March. "This," says Louise, "is a thing which does not happen once in a hundred years!"

Another "*chose fort remarquable*" is that of a woman who one night, while nursing her infant, "a serpent, the most beautiful as well as the craftiest beast in the world, knowing how to discriminate good from evil," entered the room, and seized the nipple the child had dropped, and, "never having tasted anything so good before," stolidly refused to relinquish its hold. Fearing it would insert its poisonous fangs into her breast, the woman refrained from molesting the animal. Various herbs and deleterious compounds were consumed in the hope of discomfiting the beast. After carrying this uninvited guest some months, the woman heard of a snake-charmer called Borillet, who finally ridded her of the monster. Those who saw this snake, says Louise, say "they never saw one so long or so large, which clearly shows how much substance there is in woman's milk."

Never did obstetricians enjoy a more enviable reputation than did this old midwife of three hundred years ago. Inspired by a noble enthusiasm for her art, she realized that its foundations rested upon a knowledge having no finality, and she impresses this upon her daughter in words still gleaming with conviction: "There is no perfect master in medicine or its kindred arts. To the end of our lives we must devote ourselves to learning. I myself saw this exemplified in the great Paré, whom I saw lying on his death-bed, then more than eighty years old, with an unsullied intellect, and as anxious as ever to learn from all who visited him."

Like the astrologer, the midwife is passing to inevitable extinction. In a near future she will be exhumed from the sociological strata of the past, and college professors will moralizingly comment on her fossil remains. Why must she go? This revolutionary character, "*cet homme de Paris qui accouche les femmes*," why does he come? Surely there is no nobler sphere of usefulness for woman than that of ministering to her sex in the hour of greatest need. Why is woman, after centuries

of repression, the fetters of which are still but partially unloosed, to be debarred from a career for which by every natural sympathy and instinct she is fitted?

As astronomy owes its paternity to the vague science of astrology, so midwifery is the mother of obstetrics. The midwife succumbed to causes similar to those securing the extinction of the alchemist and the astrologer. Her specialism is too narrow. Her art is unirradiated by general principles. Her opportunities for the acquisition of knowledge are limited to the rough schools of experience. The seats of learning, for the most part usurped by a stronger and more selfish sex, are only beginning to permit women to acquire even the rudiments of learning, while popular prejudice in matters of physiology is fairly represented by the woman who wrote to her daughter's school-mistress, "Please don't teach my girl anything about her inside." In some few places the midwife still exercises a sharply contested sovereignty, and occasionally the "man of Detroit who delivers women" is kept outside, while the midwife does the work. Contrast this ancient midwife with her modern representative, and we see neither progress nor improvement. Nay, it is an insult to name Louise Bousier, the skilful midwife, the piquant and versatile writer, with the midwife of modern days.

The most striking characteristic of the modern midwife is her obvious incompetency for the duties she assumes. She could not describe the circulation of the blood, or tell at which side of the body is the pyloric end of the stomach. Supremely ignorant of the anatomy and physiology of the organs involved in the phenomena of parturition, and knowing next to nothing of the mechanism by which the process is normally established, she is helplessly incapable of utilizing our present resources for correcting abnormal presentations. The beneficial forceps she regards as an instrument of destruction, second only in deadliness to the cephalotribe, only to be used as a *dernier ressort* to avoid Cæsarian section. Unable to diagnose the existence of placenta previa, she but imperfectly realizes its dangers to mother and child, and post-partum hæmorrhage is a catastrophe which completely demoralizes her professional resolutions. She is incompetent to relieve the moment of anguish by the administration of the timely and merciful anæsthetic. The vaguest intelligence characterizes her knowledge of puerperal complications. Ignorant of the pathology of convulsions, she has naught but empirical remedies for their relief; while pyæmia, septicæmia, thrombosis, and embolism are dangers remotely beyond her power of comprehension, and the puerperal phlegmasiæ are indefinite conditions of incidental, but remote, significance. Her successes are limited to providing the venerable, and to her mind indispensable, binder, and to performing the ablutions of the child.

The midwife goes because she is not fit to stay. In her unprogressive dotage she is hopelessly out of relation to modern tendencies. She is an anachronism, and we know that "nature brings not back the mastodon." She cannot determine to whose care the lying-in woman will be intrusted in the future; perhaps to the carefully educated, naturally gifted female physician, but doubtless to one better qualified than the midwife to conduct labor to a safe and successful termination.

The past is less "an insubstantial pageant faded" than a gloomy prophecy. Intellects richer and riper than ours will be brought to the solution of this problem, and in the days when we are gone, men assembled in medical conclave will interrogate the opinions of our age, as we have that of Louise Bousier; for by this

intimate communion with the past, and by this means alone can we learn to distinguish what is transitory and accidental in human character from what is permanent and immutable.

Discussion.

The President said that while it was not customary with the Society to discuss inaugural papers, he thought the reader would be glad to hear from any member present, and hoped that all would have something to say on the subject.

Dr. JENKINGS: I have listened with great pleasure to both the historical and critical remarks of Dr. Mann, in his paper. In this community, a proportion of the midwives are very ignorant, and one of the gravest points in the case is their inability to appreciate cleanliness and to avoid carrying contagion. It seems to me that it is absolutely impossible for one who has not had a physician's education, to deliver women with any degree of safety.

Dr. CARSTENS thought that the subject was one of great interest. It is evident that there is a necessity for educated women physicians, who will take the place of midwives. In this country the midwife is looked upon as a person who takes charge of the baby. He (Dr. Carstens) had had cases where he attended to the delivery of the child, and the midwife called every day to wash and dress it. In remote country districts where there are no midwives, the women help one another, and there is no necessity for a physician. In this instance there is no carrying of germs either. The public is becoming more enlightened, and demands something more than the midwife is capable of.

Dr. CHITTICK was of the opinion that the question was a serious one. Physicians might object to midwives, but there was a reason why they would continue to exist. This reason was a financial one. There are midwives in this city who attend cases and visit for nine days for three dollars. The women do a large business.

Dr. JENKS: The remedy for this affair among ourselves has been well stated by those who have spoken, but this is not enough; we should have this matter regulated by law, a law like that of the State of Illinois. This will rapidly diminish the number of these ignorant midwives. I remember a case in this city to which I was called a few years ago. It was a footling presentation, and the attending midwife had pulled and pulled until the body was extracted up to the head, which she could not remove. I found that the head was almost severed from the body, being attached only by a small piece of skin.

There are some women, who, as a matter of custom, will employ a midwife rather than an educated female physician.

Exhibition of Instruments.

Dr. JENKS showed H. Marion Sim's stem pessary, which has the end of the stem tipped with soft rubber.

Dr. MAIRE asked if it was the practice to leave the pessary in the parts indefinitely without watching; to which was replied, that it was not.

The President also exhibited Tieman's new patent needle-holder, which is a combination of the well-known Russian instrument and Hagadorn's holder. He also showed some dental silk, which he had found of service in Emmet's operation. The advantage of this silk is that it can be split up into any size strand, so that by carrying one size the surgeon has all that is necessary.

EDITORIAL.

THE cases and illustrations of hypospadiasis presented in this number, represent a condition, rare, it is true, and yet of sufficient frequency to make the first examination of an infant, with a view to determine the sex, a very important matter. It is not easy to distinguish between a hypospadiac male, and a female, infant; the little cleft penis may easily pass for a large clitoris, the position of the urethra, the appearance of the labia minora and majora, are identical, as the testicles in hypospadiacs usually do not descend into the split scrotum until later in life. In these cases, also, there may be an opening simulating a vagina, although precisely here is where the chief point of difference may be found between hypospadiacs and females. It must not be forgotten, however, that the vagina may be absent in females. In short, there are cases where the diagnosis can only be made post mortem.

Practically, all doubtful cases are classed as girls, and educated and clothed as girls, and a diagnosis is made, if at all, after puberty. The cases here published show the social and moral difficulties likely to arise from such a mistake. It is easily seen how difficult it is to change not only the dress, but the whole social environment and mode of earning a living, if the original error of diagnosis is ever recognized. Hypospadiac males, educated as women, therefore, have every motive for concealing their condition, even if they understand it, and it is probable that there are a considerable number of such persons living as women in the community. This condition has always given rise to strange and marvellous stories from the ancient

*“juvenis quondam nunc fœmina Cœnis
Rursus in verterem fato revocata figurem”*

to the celebrated Hohman,¹ who is apparently female on one side and male on the other, and who, after living in sexual relations as a woman for some twenty years, on the cessation of menstruation, at about forty, found out that he was a man, married a woman, and is still living, while the pathologists are waiting, and we might almost say hoping, for a post-mortem examination. It is probable that some scandalous occurrences which occasionally disturb social purity, and furnish food for sensational gossip, or material for prurient fiction to the discredit of womanhood, might, if the truth were known, be traced to the actions of hypospadiacs. By a careful examination of the sexual organs at birth, repeated at and after puberty in doubtful cases, or in such as seem to show an abnormal and masculine type of development after puberty, the physicians can usually prevent these unfortunate persons from being educated as women,—a mistake which, while unimportant and even convenient during childhood, is almost certain to lead to much mental suffering, and often to serious social trouble, after the age of puberty.

¹ American System of Gynecology, Vol. I.

SALPINGITIS.

Discussion on Dr. Polk's Paper. — American Gynecological Society, Sept. 13, 1887.

DR. A. MARTIN, of Berlin: "We can only progress in this important matter by distinguishing between the different forms of disease of these organs. Ten years ago I pointed out the anatomical forms of these different affections. In only a small number of cases is the tube the seat of a neoplasm. I have only found one case of carcinoma of the tube. The most frequent disease of the tubes is catarrhal inflammation, extending from the uterus. We frequently see it following the puerperal state. It has often been supposed that the salpingitis was of gonorrhœal origin, but only in a few instances have the gonococci been found in the tubes. In most cases the disease of the tubes is a simple benign affection; a catarrh which increases the size of the tube and may give rise to hæmorrhage, particularly at the time of menstruation, and occasionally to pyo-salpinx. Frequently, early occlusion of the tube is the result.

"Only a small number of the 250 cases coming under my observation have required operation. As in most cases the disease is a simple catarrh, we must first institute treatment adapted to the simple nature of the affection. If we do not succeed in relieving the symptoms and reducing the size of the tube, we are to operate. I have done 18 operations for disease of the tube; but very seldom did the tube give me the occasion for the operation. Generally it was the spread of the disease to other pelvic organs, particularly the ovaries. In many cases there was abscess of the ovaries. This severe complication is not observed with such sufficient frequency as to warrant operation in all cases of salpingitis.

"In operating on these cases I puncture the tube before removing it. I do this because purulent matter often escapes into the peritoneal cavity from rupture of the tube. I cannot say that my statistics are as favorable as some. I have lost about 12%. I never perform the operation except where there is a distinct tumor. In nearly all of the cases there was severe peritonitis. In the majority of cases we can cure these patients by general treatment."

DR. T. A. EMMET, of New York: "I hold much the same views as Dr. Martin. A large number of these cases can be cured by careful general treatment, and it is our duty to operate in no case until the woman has had an opportunity to get well without operation. When the disease of the tube is unquestionably of gonorrhœal origin, the operation may be resorted to at once. I am satisfied that two-thirds or more of the cases operated upon to-day will not be operated on five years from this time."

DR. WILLIAM GOODELL, of Philadelphia: "I agree in a large part with what Dr. Martin has said. My rule is to try, in the majority of cases, the effect of rest treatment, with general and local medication. It seems to me that the author gives us an operation more dangerous than the removal of the ovaries. What objection is there, after the abdomen is operated, to the removal of the ovaries and tubes? This is not a mutilation. They are unable to perform their function. Rather than resort to a second operation, such as Alexander's, I should favor the removal of the tubes and ovaries.

“ In cases of mal-position of the uterus, associated with disease of the tubes and ovaries, I have frequently righted the uterus by introducing a pessary at the time the ovaries and tubes have been removed, and keeping it in during the process of recovery. The pessary may then be removed and the uterus keep its position. I have had a case which improved temporarily under rest treatment, but in which I was finally compelled to resort to operation.”

Dr. G. BANTOCK, of London: “ The question which has been proposed may be answered in the negative. My views have been well expressed by Dr. Martin. I never contemplate the removal of the ovaries without a great deal of anxiety. Ordinary cases of salpingitis due to catarrh can be cured by rest and constitutional treatment. When we come to pyo-salpinx and hæmato-salpinx the conditions are different. A well-marked case of pyo-salpinx, whether due to catarrh or to gonorrhœal infection, will require operative treatment. I have, however, seen tubes which evidently had contained a large quantity of pus, but which, when examined, contained only a small quantity of cheesy matter. It is rare to have death from the rupture of a pyo-salpinx. In hæmato-salpinx the condition is far more serious than in pyo-salpinx.

“ About one year ago I had under treatment a case of fibroid tumor of the uterus. The patient suffered a great deal of pain, and I was induced to operate. I found numerous adhesions, and when I reached the brim of the pelvis the adhesions were so numerous that I could not proceed. I therefore determined to remove the ovaries and bring about the menopause. The left ovary was removed without difficulty, but when I came to remove the right ovary it could not be found. Fluid was detected in the right side, and an incision showed that there was a fibroid tumor which had undergone cystic degeneration. The edges of the cavity were stitched to the abdominal wall, a large opening being left to facilitate drainage. In three months the patient was quite well. She was subsequently married, and a short time ago was delivered of a living child. It is, therefore, clear that when the mischief arises from the outside of the tube, sterility does not necessarily result. When, however, the inflammation begins inside, sterility will probably be induced.

“ With reference to the procedure suggested of loosening adhesions and allowing the tubes and ovaries to remain, I am inclined to think that that is not the correct treatment. If the tubes and ovaries are so diseased as to require the removal of adhesions, I consider it proper to remove the tubes and ovaries. The effect of applying ligatures on each side of the uterus is to lift the organ into a more satisfactory position than can be done by Alexander's operation.”

Dr. R. S. SUTTON, of Pittsburg: “ I agree that all cases of salpingitis should not be operated on; but if pus exists in the Fallopian tube it is our duty to evacuate that pus, just as it is our duty to evacuate a collection of pus in the arm. No one has a right to allow a woman to go around with a pus sac ready to burst into the peritoneum, when we can remove it. The condition of life of the patient must be considered. A poor woman may require operation, while a rich one might be able to get along without operative measures.”

Dr. GILL WYLIE, of New York: “ In one thousand of my earlier cases of pelvic peritonitis and cellulitis I operated about once in every ten cases. In later years the proportion has increased. Of my last 60 cases, 60% were for pyo-

salpinx, and all these cases have recovered. I should not be willing to try the operation suggested by the author."

Dr. W. M. POLK, of New York. "The question which I considered was in regard to mutilation. A woman has a right to her ovaries if they do her no harm. Dr. Bantock's case shows that the presence of adhesions is not a bar to pregnancy. I think that the removal of the tubes is a most important operation, but we must avoid the extirpation of the tubes and ovaries unnecessarily."

A CASE OF COMPLETE HYPOSPADIASIS.

BY PROF. MAIN-SALIN.

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Translated by Dr. J. G. TAPPER, Edin., Ill.

THE person under consideration was reared as a girl among her sisters without any knowledge of abnormality of her body until her twenty-third year. It is true she was informed by a physician, at the age of fifteen, that although her organs of generation closely resembled those of the female, yet were defective in the absence of a uterus, but without this naturally leading to the discovery of her sex. At the time I first saw her, she was attired as a lady moving in the very best of society, and her demeanor was of such a character as to place her in this rank. She complained of amenorrhœa, with other symptoms, which induced me to insist upon an examination, which gave the following results:—

The patient was five and one-half feet in height, slender in form; features of the face were coarse. Upon both cheeks and chin were marked evidence of a beard. The growth was so pronounced, that he must have shaved every day to avoid attraction. The heavy braided hair reached to the middle of the waist. The voice was properly masculine; yet in consequence of the fact that it was very disagreeable to himself, being known as a woman, to converse in a deep voice, he had accustomed himself to use a kind of falsetto, which gave the voice a peculiar clang. With the exception of this it was very pleasant. Trained as a female voice, it had, through its naturally deep and acquired falsetto tones, a wonderful compass.

The entire body was masculine. The chest was strongly developed, and with the abdomen was thickly covered with hair. No development of mammae. To cause these parts to appear with womanly grace he had a pair of pads introduced beneath the underwaist.

The pelvis was small. The distance between the spinae ilei ant.

super. being only twenty centimeters. The hips were not well defined. For this reason he had found it impossible to support his skirts in the usual manner, but had by his own hand devised for himself a suspender form of sustaining apparatus. Thighs were without the convergence at the knees, usual in woman. Concerning the genitals, they closely resembled, as the plates will clearly show, the female generative organs. No vagina could be detected, and examination per rectum revealed neither uterus nor ovaries, nor rudiments of them, notwithstanding the patient was easy of examination, and these were thoroughly made and repeated a number of times. One could thus accurately locate all the male organs with the exception of the prostate.

The parts which resembled the labia majora were large and thickly covered with hair. Plate III. In each of them, by palpation, could be detected an egg-shaped body the size of a walnut, firm and freely movable, from the out-turned surface of which sprang a well-rounded prominence, unquestionably a testis with its epididymis. The right was somewhat larger than the left. Above and between these bodies arises the clitoris, resembling a penis with its glans. This measured 6 centimeters in length, and was entirely covered, save the glans, with a freely movable skin. This terminated at the edge of the glans in a smaller fold, closely resembling a retracted præputium, and passing down from each side of the corpus was a larger fold, comparable to the labia minora. Upon the under surface of the penis, reaching from the septum of the glans to the base, was to be seen a well-defined groove, that was directly continuous with the urethra which passed beneath the symphysis. During erection there was considerable elongation of the penis, but with a downward curvature. Directly beneath the urethra and in union with the two smaller folds, very like a new thread formation, was to be found a five centimeter long cul-de-sac, so minute that only the smallest sound could be introduced. All the features were therefore masculine, and, leaving out of consideration the long hair, there was not a single characteristic belonging to woman. Here, then, was a case, without doubt, of hypospadiasis, with complete division of urethra as well as of the scrotum, and where a mistake of sex had been made. Such a deformity, accompanied by an incomplete development of the penis, with a late descent of testis, can, naturally, very easily account for the mistake having been made, yet even this must occur very infrequently. But that an error should not be detected and corrected until so late as in this case, must belong to the exceptions. Since his heavy beard and masculine manners would always unpleasantly accompany him as a woman, and not only for this reason, but since of late, under the influence of his intimate acquaintance with women, he had

begun to be more and more oppressed with strange and peculiar feelings, which he only suppressed with the greatest difficulty, I advised him to change his dress, which he accordingly did. Since that time he has informed me of the contentment the change has brought about, and he has now the full appearance of a man and his habits.

He has three sisters who are all normally developed, and finds nothing in his family to favor a tendency towards these malformations.

Prof. Pozzi, of Paris, has described¹ a frenum masculinum of the vestibule in the female, and illustrated it with two cuts, reproduced on Plate IV. The first is from a man who had always lived and been clothed as a woman, 27 years old. When standing, the organs resembled the male, as the testicles, with (on the sight side) some peritoneal fluid, descended into the labia, or divided scrotum. When lying down the testicles were retracted, and the organs resembled those of a woman. The penis was two inches long, the prepuce divided, and the glans held down in erection by a frenum, shown in the plate.

This person had sexual desire toward the female sex, and had frequently attempted and performed an imperfect copulation, with ejaculation. The semen contained no spermatozoa. There had never been any menstruation, or molimina.

The second figure is from a young woman of 19 years, admitted to the Lourcine with gonorrhœa and syphilis. Although she had a perfect hymen, there was no vagina, and, as far as rectal examination would show, there were no ovaries. She had never menstruated, nor shown any periodical molimina, although at the age of twelve the breasts developed, and the body passed through the changes usual at the time of puberty. She also later acquired the habit of masturbation.

Prof. Pozzi, in describing these cases, calls particular attention to the presence of a homologue of the frenum seen in the woman, and to its relations to the formation of the hymen. He has examined many cases of embryos and infants, his conclusions being that the hymen is derived from the vulva, and not from the vagina. This membrane is formed at the expense of the uro-genital sinus, which forms also the very short vestibular canal which constitutes the threshold or margin of the vaginal canal. The hymen and the vestibular canal are seen in these two cases, one a woman, and the other a male hypospadiac, neither of whom had a vagina or uterus. The bulb of the vagina, so called, is not the homologue of the bulb of the male urethra.

The male corpora spongiosa are not homologous with the female labia minora. In this hypospadiac there are visible well-marked labia minora, and also corpora spongiosa, although the latter are atrophied, in the form of a frenum.

The corpora spongiosa are the result of a special formation along the sides of the uro-genital sinus, the external covering of which is developed into the labium majus, and the internal covering into the labium minus in woman (or in hypospadiacs), while by the union of the sides of the uro-genital sinus in man is formed the mesial raphe, and the septum of the scrotum.

¹ Comptes rendus et mémoires de la Société de Biologie. Séances 26 Janv. et 10 Fév., 1894.

In the female vestibule, between the clitoris and the meatus, can be detected a little frenum, straight, slightly furrowed, and cleft inferiorly to surround the meatus urinarius.

The hymen exists; it seems plainly to be a continuation of this frenum, which Pozzi calls the masculine frenum of the vestibule.

The hymen is the analogue of the bulb of the male urethra; it is the bulb remaining in embryonal state, non-erectile and membraniform at the entrance of the canal vestibulaire, which is the remainder of the uro-genital canal.

The frenum masculinum vestibuli in woman is the homologue of the anterior or cylindroid portion of the corpora spongiosa, while the hymen corresponds to their posterior, or ovoid portion.

A case resembling the first of the above was reported by Dr. Lathrop, with illustrations by Dr. Parker (See Bost. Med. and Surg. Journal, vol. xcvi., No. 21, Nov. 22, 1877). Some very remarkable cases of hermaphroditism are described in Mann's "American System of Gynecology."

THE MOST RECENT STAND-POINT IN REGARD TO THE TREATMENT OF CARCINOMA UTERI. — SCHANTA. (*Centr of Gyn. Feb., 4, 1888.*)

THE relative value of partial and complete extirpation of the uterus is discussed in this paper, and a conclusion reached in favor of the latter. The author analyzes the statistics of Hofmeier, who advocates, with Schroeder, the partial operation, and alludes to the statement that the total extirpation is advised by these authors only in cases in which the disease has extended beyond the *os internum*. In such cases, however, it must be remembered that the disease is well advanced, and it is easy to understand that the comparative results must be unfavorable to the radical operation. A more satisfactory opinion can be reached by comparison of the statistics of operators who do both the partial and the complete operations with those of the ones who do only the complete. Thus, by comparison of the statistics of Hofmeier with those of Martin, it is seen that in the former there has been forty-five per cent. of permanent recoveries, and in the latter seventy per cent. As to the charge that there is much greater immediate danger from the complete operation, the statistics of Martin and Fritsch for the past two years show the relatively small mortality at the hands of experienced operators. The assertion that removal of the entire uterus removes the possibility of conception and child-bearing is counterbalanced by the fact that those who have become pregnant after the partial operation have always aborted. As an illustration that it is impossible to distinguish clinically the limits of carcinoma of the cervix, the author cites three cases

which came under his observation. In a woman who had reached the sixth month of pregnancy carcinoma of the anterior lip of the cervix was diagnosticated, and the lip was excised. Normal labor occurred at term. Three and a quarter years later carcinoma appeared in the posterior lip. The uterus was extirpated, and there has been no recurrence. In a woman 47 years of age, tumor of the cervix, as large as an apple, and apparently well defined, was observed. After total extirpation it was found that the disease had gone beyond the *os internum*. In a third case, in which extirpation was performed on account of a very small superficial carcinomatous growth of the cervix, a small carcinomatous nodule was also found at the fundus. Clinical facts teach us that the greatest care and attention should be paid to cases in which there are catarrh and erosion of the uterus. If a nodule is at any time discovered, it should be at once excised and examined microscopically for carcinomatous elements. By this method the disease may be discovered in many cases in its early and curable stage.

HOSPITAL REPORTS.

Gynecean Hospital, Philadelphia.

REPORT OF A CASE OF ABDOMINAL SECTION FOR HYDROSALPINX, FOLLOWED BY INTESTINAL OBSTRUCTION AND ENTERO-VAGINAL FISTULA — SECONDARY OPERATION — RECOVERY. BY CHAS. B. PENROSE, PH.D., M.D.

THE following case occurred under the care of the writer: —

C. G., aged 21, married one year, had a history of syphilis two years ago. She gave birth to a stillborn child twelve months ago, and was confined to bed for two months afterwards with post-puerperal trouble. She has been sick ever since, complaining of pain in the abdomen and back. For the past year menstruation has been regular, scanty, and painful.

At the time of the first examination this woman, though suffering continual pain in the lower part of the abdomen, appeared in fairly good health, and presented no apparent symptoms of syphilis, and the history of syphilis was not obtained until after the second operation. Vaginal examination showed distended Fallopian tubes and enlarged ovaries.

The uterine appendages were removed on Nov. 27, 1887. Both tubes were distended with serum, and there were two small broad-ligament cysts which were ruptured during removal. These were general, healthy adhesions, the sigmoid being adherent to the left ovary. A glass drainage-tube was introduced on account of bleeding from broken adhesions.

The drainage-tube was removed forty-eight hours after operation. It appeared to have been unnecessary, as but little bloody serum was discharged from it. The bowels were moved by sulphate of magnesia on the second day. The patient did well until the fifth day, when she began to complain of great pain in the right and left inguinal regions.

On the sixth day the pain was worse; the pulse was 104, temperature 101°. The tongue was dry and coated. The bowels were moved by enemata, the administration of which gave great pain.

On the seventh day the condition was changed, temperature was 101°, pulse 105.

On the eighth day the pain in the lower part of the abdomen had not diminished. The tongue was brown and pasty. There was no tympany. The upper part of the abdomen was flat; there was slight fulness and hardness and great tenderness on pressure in each inguinal region. The vagina was found to be full of feces, though the fistulous opening could not be detected by the finger, and tender masses were felt posterior to, and on each side of the cervix.

It was decided, immediately, to reopen the abdomen. The abdomen was opened in the line of the primary incision. About eighteen inches of small intestine were found adherent in a loop in the right inguinal region. The two ends of the loop were glued together and firmly adherent behind the pedicle of the right tube and ovary: the upper part of the loop being adherent to the parietes. This loop of intestine was distended, and it was found impossible to empty it by pressure on account of obstruction at the adherent ends. The adhesions were broken by the fingers, and the intestine was brought out of the abdominal opening. The walls of the adherent intestine were very much degenerated; they were about half an inch in thickness, and so stiff and friable that, in straightening the loop, the intestinal coats broke transversely in two places, down to mucous membrane. There were two spots, several inches in area, which were black and necrotic. The mesentery along the margin of the gut was also much thickened. The intestine seemed as degenerated and friable as a Fallopian tube in a case of pyosalpinx.

The diseased portion of intestine was wrapped in a warm towel and placed upon the abdominal wall for resection, after the rest of the abdomen had been examined. In breaking through the unhealthy adhesions about the left pedicle, a pus-pocket was opened and several ounces of pus escaped. The sigmoid was found adherent behind the left pedicle and to the posterior wall of the vagina; and there was partial obstruction of the gut at this point. The walls of the sigmoid were hypertrophied and degenerated, as in the portion of the intestine already described; and

during the manipulation they broke, making a wound two inches in length, down to mucous membrane. The portion of the sigmoid adherent to the vagina was black, and necrotic over a space several inches in area. The meso-colon was thickened, and was perforated in freeing the sigmoid from its adhesions; the gut was separated from the vagina and from all parts to which it had been adherent.

With the exception of the sigmoid and the portion of small intestine already mentioned, all other parts of the intestinal tract seemed to be healthy. The diseased gut had been separated by adhesions from the general peritoneal cavity, and there were no signs of general peritonitis.

As the condition of the sigmoid was as bad as, if not worse than, that of the small intestine, and as the diseased gut bled freely and its color had improved since breaking the adhesions, and as the woman was almost pulseless, it was decided to restore the gut without resection. The two breaks, each about two inches in length in the small intestine and one in the sigmoid, were closed by continued silk suture. The small intestine was thoroughly washed with warm water, and was restored to the abdomen. It was placed transversely, as well as possible, under the liver and stomach, in order to avoid kinking. Before this was accomplished it was necessary to puncture a healthy portion to get rid of the distention.

The whole abdominal cavity was freely irrigated with warm water. A large rubber drainage-tube was carried from the epigastric region, immediately beneath and posterior to the diseased small intestine, to the lower angle of the abdominal wound. A glass drainage-tube was placed posterior to the right pedicle, and another posterior to the left pedicle, between the sigmoid and vagina. The two glass tubes emerged from the lower angle of the incision, crossing each other, one on each side of the rubber tube. A final sponging of the peritoneum was not made, and a considerable quantity of clean warm water was purposely left in the abdomen. The abdominal wound was closed with silk sutures.

Immediately after the operation, the pulse was 160, and scarcely perceptible at the wrist. The drainage-tube was cleared every two hours for the first twenty-four hours after the operation. All the tubes were flushed with warm distilled water, the water being injected into one tube and allowed to flow from the others. Free communication among the tubes seemed to exist for the first twenty-two hours. After this the rubber tube became separated from the others by peritoneal adhesions, and two hours later, twenty-four hours after the operation, there ceased to exist any communication between the glass tubes.

Frequent vaginal douches were administered, and after the feces, which had been contained in the vagina before operation, had been

removed, no further fecal discharge was observed; and there was at no time any fecal discharge from the drainage-tubes.

The convalescence of this patient was uneventful. The bowels were moved by small doses of calomel on the third day after operation.

On the fourth day inunctions of oleate of mercury and large doses of iodide of potash were administered, as a definite syphilitic history had been made out, and it was concluded that the intestinal lesions were due to syphilis.

The glass tubes were removed and replaced by rubber tubes four days after operation. The long rubber tube was withdrawn gradually. By the eighth day after operation all the tubes had been removed.

She was discharged from the hospital on January 11, 1888, 51 days after the first operation. She was free from pains and was rapidly regaining health. The abdominal wound was closed and the bowels were moved regularly and painlessly.

There are several points of great interest in connection with this case.

The unrecognized syphilis with which the patient was suffering at the time of operation was the cause of the subsequent trouble. The manifestations of the disease occurring in structures, the vitality and the power of resistance of which had been diminished by the first operation. Though analogous phenomena are observed after traumatism, or after other surgical operations upon a syphilitic person, yet I know of no similar lesions which have occurred in the intestinal tract.

The degenerated condition of the intestine was peculiar in the rapidity with which it occurred and in the character of the lesions. It was not that seen in ordinary cases of intestinal obstruction, or in cases where peritoneal adhesions have formed after abdominal section; and, in fact, the diseased condition of the intestines was the cause of, and was not caused by, the obstruction; the obstruction being due to the sharp bend at the ends of the rigid loop. Complete obstruction had probably occurred but a very short time before the second operation; there had been no previous symptoms, like stercoraceous vomiting and general abdominal distention. The diseased loop was incapable of any great degree of distention on account of the rigidity of its walls.

The necrotic spots occurred at points where the intestine had been adherent, and where its vitality was probably lowest. They existed only on one side of the gut, and seemed to bear no fixed relation to the arterial distribution.

The small intestine would probably soon have broken down completely at these spots, as the sigmoid had done; for the fecal fistula,

though undetected, must have existed in the centre of the black, thickened patch which marked the point of adhesion with the vagina.

The fistulous opening was small, and it closed quickly when the gut was restored to proper position, and the conditions were favorable for its repair. As has been said, there was no subsequent fecal discharge from the vagina or the drainage-tubes.

The recovery of this woman is due to the free abdominal drainage and to the repeated irrigations. The warm water left in the abdomen immediately after the operation hastened reaction from shock, and probably also served the same purpose as transfusion. The subsequent irrigation kept the abdomen free from septic products, and encouraged healthy action in the diseased gut. If proper appliances had been at hand continuous irrigation would have been used.

TWO CASES OF GONORRHOEAL SALPINGITIS.

MURDOCK FREE SURGICAL HOSPITAL FOR WOMEN. SERVICE OF DR. E. W. CUSHING. REPORTED BY F. L. BURT, M.D., HOUSE SURGEON.

CASE I.

MRS. — is 19½ years of age, and is the mother of four children, the last birth six months ago. Now living. Menses at 13½, and never attended with much pain. Labors were attended with no difficulty, and she seemed to be perfectly well up to July last, since which time she has lived by herself. She has had severe backache; an extremely thick mucopurulent vaginal discharge, which has constantly grown more in quantity and irritating. Associated with this has been a scalding pain on and after urinating. She presented herself to me for treatment on Oct. 8th, the following conditions being present: There was a laceration of the cervix, the edges of which were everted, presenting an eroded surface the size of a silver dollar. The surface was intensely irritated from being bathed in the discharge above mentioned, which was seen to be flowing in large quantity from the os. She was admitted to the hospital on October 18, when there was more pus than it would seem could come from the uterus, and, on examining further, an enlarged tube was found on the left presenting a tumor the size of a small orange. Pressure on this caused an increase of discharge and lessening of the tumor. Microscopic examination showed the gonococcus to be present. There was considerable tenderness over the pelvic organs, which increased in amount, and was finally relieved by poultices and douches. The vagina was freely irrigated with sublimate, the pus removed from the cervix, and tampons of cotton freely

iodoformed were applied to the eroded surface. Carbolic acid liquefied crystals with iodine, and, later, iodoform pencils, were applied to the interior of the uterus. All pelvic pain and soreness disappeared, the erosion healed and contracted in part, but the amount of secretion did not diminish to any perceptible degree. At this time it was decided to operate upon the case; and, before advising a laparotomy, it was thought wise to dilate the canal, curette the surfaces, irrigate and mop out the interior, apply liquefied carbolic crystals to the surface, and finally repair the cervix with silk over a drainage-tube. This was done on the 5th of December, after which time the discharge was the same as is usual in ordinary cases after repair of cervix, and she was discharged cured, December 29.

CASE II.

Miss —, age 21, entered the hospital December 15, giving the following history. Had always had difficult menses, the pain lasting throughout the period; but aside from this was perfectly well up to three months ago, when, after first intercourse, she began to suffer from irritation of the urinary passages, urinating frequently, in small quantities and attended with considerable scalding. During the same period there had been a profuse vaginal discharge, which she says continued up to one week ago. Examination shows the vaginal membrane in an irritated condition; there is a stenotic os from which exudes a muco-purulent discharge. There is considerable endometritis present, a quite sensitive internal os, and uterus in first degree of ante flexion. Both tubes were affected, were about the size of a lead pencil, and felt similar to an atheromatous artery; they were very tender. The uterine discharge contained gonococci.

Irrigations and hot douches were used, and an iodoform pencil placed in uterus, followed by a tampon of cotton. Jan. 2d she had ether, and the uterus was dilated and cavity curetted. Cavity was irrigated and iodine applied. The vagina was irrigated every third day, and she was discharged well on January 17.

DR. VIRGIL O. HARMON, of Atlanta, Ga., publishes a case of hyperinvolution of the uterus after Emmett's operation of trachelorrhaphy, and wishes to learn of any similar cases which may have been observed by other surgeons.

THE next annual meeting of the American Medical Association will be held in the Music Hall, Cincinnati, on May 8-11. Communications for the Section of Obstetrics and Gynæcology should be addressed to Dr. Ely Van der Warker, Syracuse, N.Y., President of the Section, or to E. W. Cushing, Secretary, Boston, Mass.

ANNALS

OF

GYNÆCOLOGY

A MONTHLY REVIEW

OF

GYNÆCOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY.

EDITED BY

E. W. CUSHING, M.D.,

BOSTON.

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APRIL, 1888

CONTENTS:

PAGE	PAGE
OBSTETRICAL ANESTHESIA, <i>Dr. Leonard</i>	TRANSLATION — T. F. S.
353	CASE REPORTS
CANCEROUS DEGENERATION OF HYPERPLASIA GLANDS OF THE CERVIX UTERI. <i>J. B. Gosselin, M.D.</i>	<i>Hepburn</i>
361	THE DIAGNOSIS AND TREATMENT OF ECTOPIC ADHESIONS OF THE BILAMINAR UTERUS AND CORRESPONDING DYSMETRICAL OVARIES. <i>Schaller</i>
BREASTS WOUND BY GUN-BALLS AND RELIEF OF PAIN BY	OBSTETRICAL SOCIETY OF PHILADELPHIA DEPT. OF GYNÆCOLOGICAL SURGERY LECTURE BY — T. G. THOMAS, M.D. REMARKS BY — C. W. WYLIE, M.D. <i>Shaffer</i>
367	371
TERMINAL TWO CASES OF DEATH FOLLOWING CAESARIAN SECTION OF THE UTERUS. <i>J. R. Taylor, A.M., M.D.</i>	375
373	379
REMARKS	HISTORICAL REVIEW
381	385

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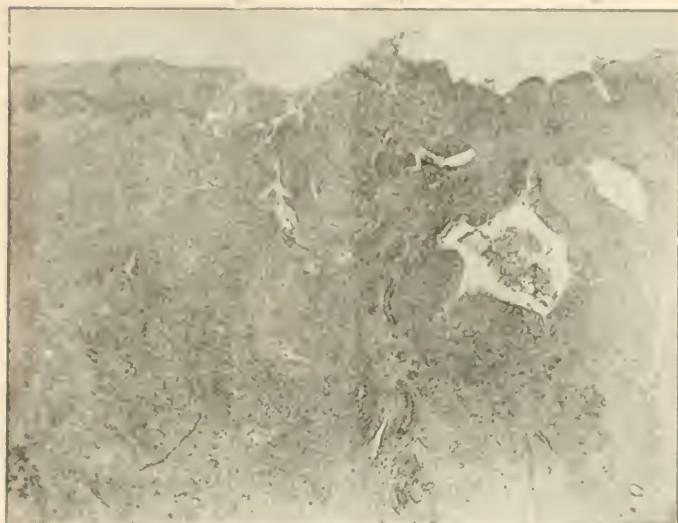


Plate I. — Fig. 1.

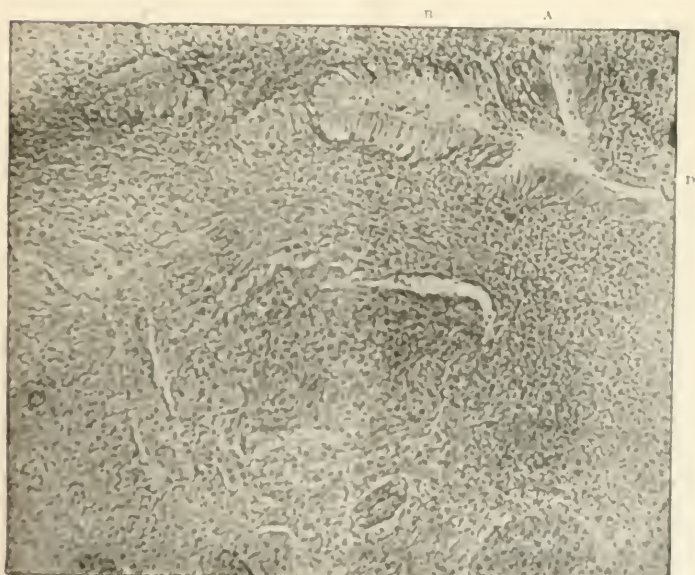


Plate I. — Fig. 2.



Plate II. — Fig. 1.

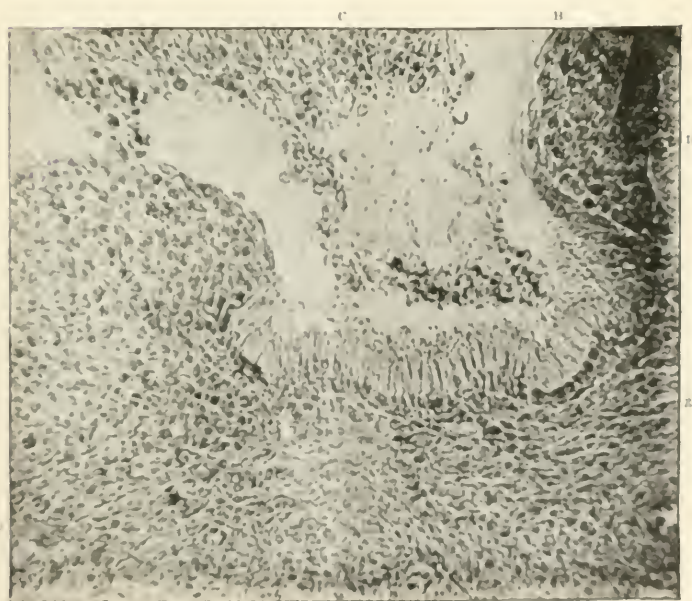


Plate II. — Fig. 2.

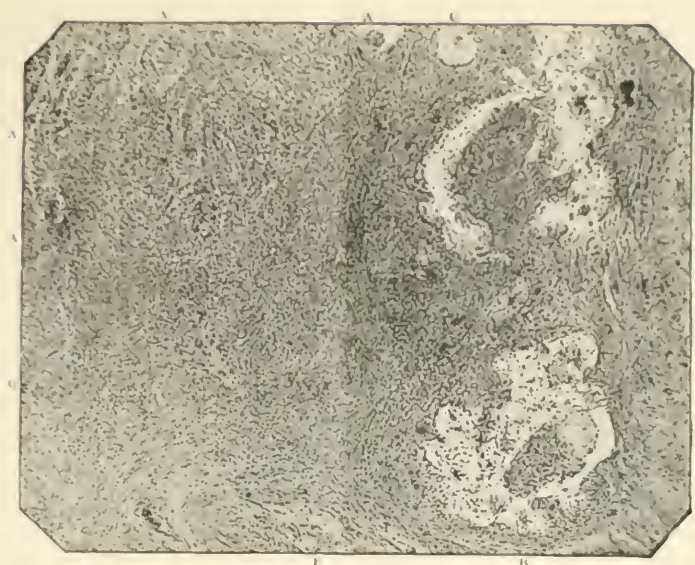


Plate III. — Fig. 1.



Plate III — Fig. 2.

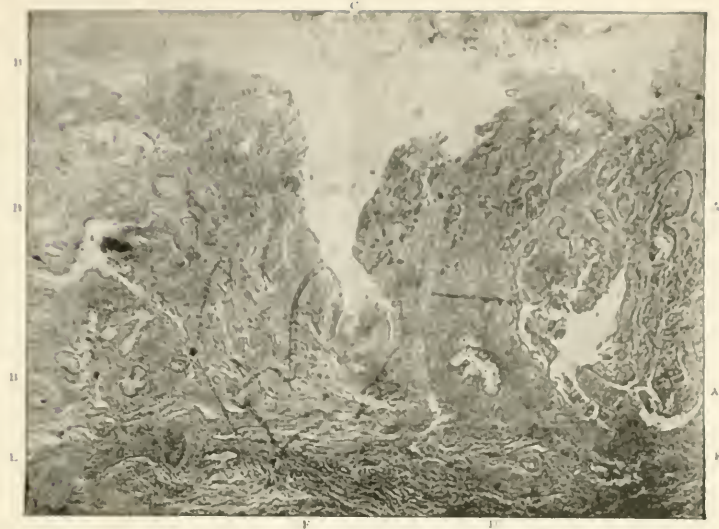


Plate IV. — Fig. 1.

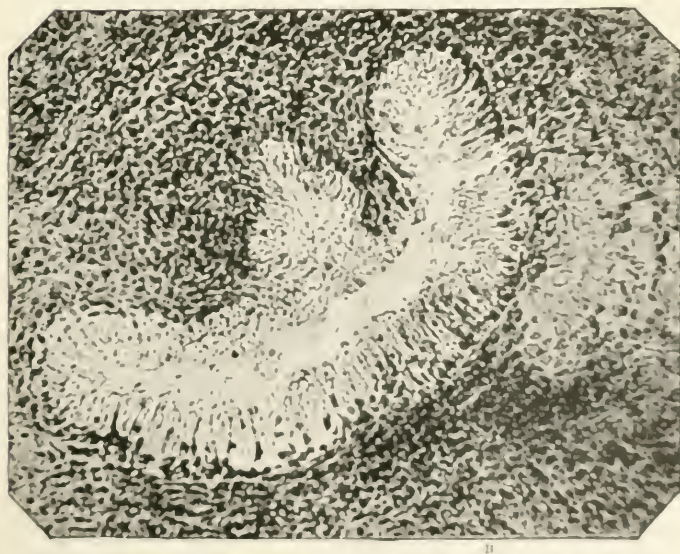


Plate IV. — Fig. 2.

ANNALS OF GYNÆCOLOGY.

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APRIL, 1888.

No. 7.

OBSTETRICAL ANTISEPSIS.

BY DR. AUVARD,

Editor of "Archives de Tocologie," Accoucheur des Hôpitaux, Paris.

HAVING been honored with an invitation to furnish contributions to this new-born journal, the appearance of which we welcome on this side of the Atlantic, being requested to keep the profession of the United States informed of what is being done in France in obstetrical matters, I will commence this review by a critical study of the antiseptic measures generally employed among us in conducting labor. A vast subject — of which I shall touch here only on the principal outlines and points interesting by their novelty, reserving questions of detail for later communications. We shall consider here only obstetrics, omitting gynæcology.

The first and an important subject in obstetrical antisepsis is that of the organization of accouchements in our French capital.

Some years ago, when epidemics of puerperal fever raged with so much intensity, when a professor of the School of Medicine (Paul Dubois) could say "that it was better for a woman to be delivered in the street than in a hospital ward," attempts were made to distribute the lying-in women, who applied at the hospital for confinement, at the houses of the midwives living in different parts of the city. Each midwife had two or three beds reserved for labor cases intrusted to the care of hospital authorities (*Assistance publique*). Thanks to this distribution, the disasters of puerperal septicaemia were seen to diminish.

To-day the immense progress, established by antisepsis, has completely changed the state of affairs. Recent statistics have demonstrated that, for the lying-in woman, the hospital ward, conducted with all the safeguards of antisepsis, is less dangerous than the isolated chamber in the city. This revolution will not fail to bear fruit immediately. The Department of Pub-

lic Assistance, in which the administration of all the hospitals in Paris is centralized, has already commenced to transform this expensive polyclinic service into a service concentrated in hospitals. The midwives are going to disappear, and each one of our great hospitals will soon be provided with a maternity department, in which there will be five hundred to two thousand, and even more, deliveries yearly. There will be a very important saving of expense, the women will receive better and more intelligent treatment, the students will obtain cases important for their instruction.

Obstetrical antisepsis covers pregnancy, childbirth, the lying-in period, and, finally, the obstetrical operations.

Concerning antisepsis during pregnancy, I shall say very little in view to its relatively slight importance. The woman about to be delivered should be treated like one about to undergo an operation. Among the various precautions to be taken, especially in women living in the city, a tonic and strengthening food cannot be too highly recommended. It is known that the puerperal microbes, like most of these infinitesimal germs, develop most easily in debilitated organizations.

The antisepsis of childbirth is of the greatest importance; every woman at the beginning of labor should take a bath, and, if possible, with soap. It is necessary also, at this moment, to provide for a vigorous vulvar and vaginal antisepsis. Many physicians suppose that it is sufficient to cleanse the genital organs after delivery. This is a great imprudence. If we wait until this time, the microbes will have already profited by the wounds and scratches caused by the passage of the child, and will have penetrated into the system. It is, on the contrary, before delivery, while the genital organs are intact, while the microbes, if there are any, are on the surface, without having penetrated into the interior of the tissue, that it is important to remove them, to wash them away.

Washing the genital organs with an antiseptic before accouchement is a precaution much more efficacious than is the system of cleansing after delivery. I will even say, that a very thorough washing before accouchement, provided that there has been no subsequent source of infection, removes the need of any particular cleansing after delivery. I insist, intentionally, on this point: the success of antisepsis depends on these apparently insignificant details. Another advantage is that when the genital organs are washed before accouchement there is no danger in employing a solution of bichloride of mercury, 1 : 2000, for it does not enter into any wound through which it can be absorbed. After delivery, on the contrary, the solutions of continuity are numerous, and the absorption of this medicament is possible. Hence the symptoms of poisoning which

have been reported. Bichloride of mercury, however, is one of the best and most active among antiseptics.

Washing the genital organs is not so simple and expeditious a proceeding as some physicians imagine. How many there are who suppose that after having injected some ounces of the antiseptic solution into the vagina, they have killed all the microbes which exist in this passage. Antiseptic cleansing should be done in the following manner, before delivery: A woman is placed across the bed, her limbs held by two assistants, while, with an irrigator, a light antiseptic stream is poured over the vulva (a solution of bichloride 1 : 2000); next this part is soaped;¹ the mons veneris, the labia majora and minora, the nymphæ, the clitoris, the anus, and surrounding parts are also thus cleansed.

After this soaping, and after having cut off the hair, if it is too long, for it is not necessary to shave the parts, as the Germans recommend, a vaginal injection is given. For this purpose an ordinary injection apparatus with a glass end-piece is used, and while the liquid irrigates the vagina, one or two fingers are introduced into this cavity, with which the folds are thoroughly scrubbed, as well as the cervix and cervical cavity, if the latter still remains; if not, such part of the inferior segment of the uterus as can be easily reached by the fingers. Two or three quarts of the solution of bichloride of mercury must be used in cleansing the vagina. Unless care is taken to proceed as I have just indicated, it is certain that the vagina will not be cleansed of the microbes which it contains, any more than any other region of the surface of the body can be properly washed by simply letting a current of water run over it. More than this, the rubbing is necessary to obtain the desired results. Thus the conditions indispensable for genital antisepsis are thorough washing and soaping of the exterior parts, and the cleansing of the vaginal cavity with the fingers.

When labor is terminated and delivery is accomplished, most accoucheurs, at present, use the vaginal, and sometimes even a uterine douche; the precaution may be good if there has been any operation or frequent examinations since the cleansing which took place at the beginning of labor, otherwise it seems to me useless; since the genital organs are aseptic, and the uterine contents, including the blood which accompany them in greater or less quantity, are equally aseptic, it is not necessary to give other new cleansing. The genital canal has just had a trying experience during the passage of the fetus and the secundines: it is useless to subject it to any further manipulations by giving injections when they are not necessary. I may add that corrosive sublimate may at this time become somewhat dangerous, considering the possibility of its absorption.

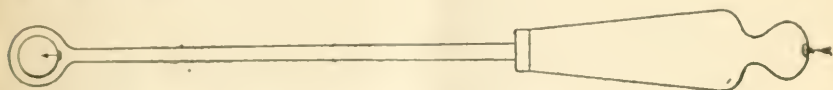
¹ Preferably with sublimate soap, which will make a lather with little water. — Ed.

During the puerperal period, if the case is normal, a simple washing of the external genitals with a solution of bichloride of mercury is sufficient. If the lochia are fetid, or if there is any reason to fear septicæmic complications, it will be prudent to make vaginal injections with the same solution. These vaginal injections ought to be performed with observances of all the rules which I have indicated above, that is to say, with a preliminary soaping of the vulva and a washing of the folds of the vagina with the fingers, while the current of liquid is passing there. Vaginal injections, such as most authors advise, are, I repeat, insufficient and illusory; much more illusory are those which are ordinarily used in the uterine cavity. I will not insist upon the indications for these injections. It is known that they are necessary whenever it is supposed that the uterine cavity contains septic products. Here I will only speak of the manner of using them.

A short time ago the uterine cavity was considered as a sort of *noli me tangere*. Some cases had been reported of sudden death following injections carried beyond the uterine orifice. These isolated cases, usually incompletely interpreted, had increased in importance in being reported from mouth to mouth. With antisepsis there was a return to intra-uterine injections, for it was rapidly seen that far from being dangerous they gave excellent results. Obstetricians commenced to be bolder, but, nevertheless, the fears of former times have not disappeared completely, and it is not without some apprehension that the uterine cavity is entered and liquid injected there. In every case the intra-uterine injections must be thoroughly performed, in order to be efficacious. As to the danger of these, the cause of the accidents which have occurred is yet unknown (for the reflux of liquid into the peritoneum has not been proved). These dangers, therefore, do not seem to me to be greater from injections wholly and completely made than from those which are performed timidly. In point of fact, most obstetricians, to make an intra-uterine injection, proceed in the following manner: they take a catheter with a single or double current, and introduce the extremity into the uterine cavity (and how many physicians, from fear, hardly pass the interior orifice of the uterus!), and gently and slowly they cause to flow one or two quarts of the antiseptic solution; they think that they have thus washed out the uterine cavity, but the walls covered with mucus and blood are not cleaned at all. If after such an injection one could open and examine the uterus, it would certainly be seen that the whole surface of the womb is covered by a muco-purulent or bloody layer, the seat of habitation and of proliferation of microbes.

It is absolutely as if when wishing to repaint a house one should content himself with simply washing the front of it; the old paint would be

by no means removed, to do this it must be carefully scraped or burnt off. To properly clean the uterus it is necessary to scrape it, to curette it; without this one will never cleanse it from its microbes. For this purpose, in my opinion, the intra-uterine injection should be made as follows: The cervix must be drawn down toward the vulvar orifice with a hooked forceps (called in France Museux's forceps). This done, the internal surface of the uterus is scraped by the aid of a special irrigating instrument. For this I use a special curette which I have had constructed on purpose; it is composed of a metallic stem, hollow throughout its whole length, and terminated, at one end, by a metallic loop, flattened and slightly sharp; on the other end of the handle is an olive tip to which the tube of the irrigator can be adjusted.



Irrigating Curette of Dr. Auvard.

The fluid runs in direction indicated in the figure by the arrows. While scraping the uterine surface with this instrument a current of the antiseptic solution should be passed; this brings out with it the attached *débris*. I have actually used this curette ten times or more without any trace of accident, and with great advantages. Thanks to this intra-uterine instrument the uterine cavity can be completely cleaned. It is, in short, the same principle which is applied to all the surfaces of the genital organs.

Most persons, for antisepsis, are contented with simple contact of antiseptic liquid. I believe that this simple contact is entirely insufficient, and that it is necessary to do more, viz., to scrub and soap the vulva, wash out the vagina with the fingers, and, as it is difficult to readily introduce the fingers into the uterus, they can be replaced with the instrument. It is for this I have invented the irrigating curette which I have just described.

To sum up: simple washing is insufficient for genital antisepsis. The cleansing caused by the contact and current of antiseptic liquid ought to be completed (otherwise, it will be insufficient) on the vulva by conscientious soaping; in the vagina, by scrubbing by the fingers; in the uterus, by scraping with the curette; the rubbing of one and the irrigation of the other carrying away every microbe and, when simultaneously employed, assuring antisepsis.

I will not speak here of antisepsis in obstetrical operation, since it is well known as the rule, and I have nothing particularly new to report on the subject.

ON CANCEROUS DEGENERATION OF HYPERPLASTIC GLANDS OF THE CERVIX UTERI.

Read before the Section for Gynæcology of the Ninth International Medical Congress, by E. W. Cushing, M.D., of Boston, Secretary of the Section.

At the meeting of the American Medical Association in 1886, and later and more fully before the Connecticut State Medical Society, I have called attention to the views of Ruge and Veit concerning the true nature of "erosions" of the portio vaginalis cervicis.

It is now generally conceded that these eminent observers are quite right in attributing the greatest importance to the glandular hyperplasia, which is really the most important anatomical change underlying the condition of erosion, or ulceration, so called.

In investigating the subject of cancerous affections of the cervix, however, Ruge and Veit have described a condition or change of the glands, which they consider to be in itself of the nature of cancer, a transition from innocent to malignant new formation. This explanation of pathological changes, which certainly do occur as they describe them, seems to me to be much less clearly demonstrable than the view which they maintain concerning the nature of erosions.

Briefly, they attribute the greatest importance to a certain filling up of the lumina of the glands with epithelial cells, either columnar, corresponding to the natural lining of the glands, or flat, with one or more nuclei.

They give figures showing how solid processes of epithelium, undoubtedly cancerous, are found side by side with glands more or less completely occluded by the proliferation of the epithelia, and they draw the inference that the undoubted cancer originated directly in the solidified glands, and that the latter represent an early stage in the development of the cancer transition. This fascinating theory agrees so well with the views and theories of Thiersch and Waldeyer, and their followers, that it has been very widely accepted, and a plate showing the transition is given in Dr. A. Martin's admirable hand-book of Gynæcology.

Nevertheless, I think it probable that greater importance has been attached to this condition of the glands than is warranted by any facts thus far demonstrated.

In the first place, as Ruge and Veit expressly declare, in the vast majority of the cases examined by them, the carcinoma did not originate in the new-formed glands, but infiltrated the cervix as a "carcino-sarcoma," an aggregation of small cells, lying in masses, more or less com-

pletely separated by partitions of connective tissue. In such cases there was no evident connection with the epithelium of the surface, nor with the glands. In four out of twenty-two cases of incipient cancer of the cervix, however, they found appearance of solidification of the glands, and filling up of their lumina with epithelium, which they describe and figure as a transitional stage in the development of the cancer which was adjacent.

Of course it is permissible, while accepting the strict accuracy of the description and drawings of these observers, to explain the phenomena described by them in another manner; and, with much diffidence, I venture to suggest that my studies of the changes in question have led me to different conclusions from those of Ruge and Veit.

As it is my custom in cases of lacerated and eroded cervixes to remove the diseased tissue pretty thoroughly, and to examine the specimen microscopically, I have found a number of incipient cancers. I have prepared photo-micrographs of two of these and of one doubtful case, all showing the condition of the new glands described by Ruge and Veit. But I have also found in various cases, where there was no suspicion of cancer, a precisely similar filling up of the glands with epithelial elements, so that I have been led to conclude that this is not characteristic of cancer, but that it is merely a reaction of the glandular tissues to what we in ignorance call an irritation, — a sort of perverted growth of the glands which undoubtedly occurs in the neighborhood of cancers; undoubtedly is an early symptom of cancerous affection, but in itself is not necessarily cancerous at all.

The question is of practical importance in regard to the microscopic diagnosis of suspicious affections of the cervix; for as it is admitted that the diagnosis cannot be made securely by the unaided eye, nor by the touch, and as vaginal hysterectomy is now advocated, and at any rate free amputation of the portio vaginalis is indicated, in all cases of undoubted cancer, even in an incipient stage, a great responsibility is thrown on the microscopic examination.

It is not a mere abstruse point of pathology; it comes home to every conscientious gynecologist, for on the decision of the microscope rests his advice and his action.

Case N. H. shows how difficult the decision may be, — diagnosed as cancer by the eye and touch, 49 years old, glands filled up, small cell infiltration, broken line of epithelium, papillary projections. Is it a cancer? We can only say that it was likely to become so, not that it is so already, by any safe microscopic landmarks.

And here it is right to call attention to the difficulty of stating in any given case that the lumen of a gland is filled up with flat epithelial cells.

The plates of Ruge and Veit are not conclusive on this point. If a gland is lined with large cylindrical cells, with well-stained long nuclei, and then a section is made which cuts these cells crosswise, or lays bare their free ends, we get a picture of flat epithelium, which is very deceptive, and, with less experienced observers than Ruge and Veit, liable to lead to great error. Even when a whole series of glands lying adjacent to each other show occluded lumina on section, I cannot feel that the diagnosis of carcinoma is justified, but only that of adenoma, — an adenoma which may become destructive, but is not carcinomatous until changes occur in the connective tissues between the glands; until the boundaries of the glands are broken through by the growing cells, and the proliferation and collection in alveoli occurs free in the stroma of the organ apart from the glands. Even when the new glands are thus manifestly involved in the carcinomatous growth, it has seemed to me that they are invaded from without by the growth of cells in the surrounding tissue. I have not found any evidence that after filling up the lumen of a gland the proliferating columnar epithelium changes to the flat variety, and breaking through the boundary of the gland invades the surrounding tissue.

Moreover, in attributing so much importance to the fact that they found the lumina of some of the new glands occluded, Ruge and Veit have not noticed the explanation that precisely these solid acini or branches may be the first stage of their existence previous to the formation of the lumen. Such a mode of growth is seen in the formation of new glands in the walls of a multilocular cystoma of the ovary. These little solid sprouts lined with columnar epithelium afterwards become hollow, and then dilate, forming cysts. A similar mode of growth is seen in the female breast when rapidly enlarging preparatory to the secretion of milk.

Shall we, then, say that a case is not cancerous which shows no distinct structure of carcinoma on microscopic section; only a glandular hypertrophy, with some of the glands filled with epithelia, and the stroma infiltrated with small cells, the surface irregular and denuded of its epithelial layer? It is not safe so to say. For these are the very cases which, occurring in cervices amputated from women of fifty or over, with old lacerations and erosions of the os uteri, are precisely similar to others which, neglected, become eventually cancerous. Just here we find that the Thiersch-Waldeyer theory of the epithelial origin of carcinoma fails entirely. In just these cases is it impossible to find the transition from the hypertrophic glands to the cancer. The glands are there; if the case has gone far enough the carcinoma may be just beyond; but I cannot find a case where the latter arises from the solidified glands by a transition or a development and spread of the process of solidification. Neither does

it arise by an inward growth of the epithelial pockets which project down between the sprouting papillæ. (As seen in Fig. 10, *Annals of Gynecology*, No. 1.)

On the contrary, the carcinoma develops among a cloud of infiltrated small cells. They collect in masses, while the connective tissue is pushed apart or arranges itself in bands or alveolar boundaries. The connective tissue is manifestly "irritated;" it is full of small cells; it takes the stain strongly.

Then the carcinomatous process spreads inward and outward, involving and invading the new-formed glands, eating up first a part, and then the whole, of each by an infiltrating cloud of cells, which are small, round, and by no means of the flat, epithelial type, which can be seen where the carcinomatous development has proceeded further.

What have we here? The mind reverts at once to the "miasmatic infection" of the older writers, to the unknown impulse of Ruge and Veit, who have so clearly described the difficulties in the way of the acceptance of the epithelial theory in cases of carcino-sarcoma of the cervix.

May we not reconcile the long contest between the two theories, which assign the origin of cancer, respectively, to the connective tissue and to the epithelial layer of the glands of the organ involved, by supposing that the anatomical arrangement of cells which, clinically and microscopically, we call cancer is only the outward and visible sign of a morbid agent, at present hidden from us.

Whether there is a mass of small cells, and we speak of sarcoma; or whether there are sprouting processes of large epithelial cells, which we call carcinoma; whether the cells are alike or varied, large or small, — neither of these facts constitutes the real nature of the cancer. Its prevalence in certain families, its malignity, its tendency to necrosis, its power of metastasis, its infection of neighboring parts, its rapid sapping of the vital powers, its vile and peculiar smell when exposed to the surface and decomposing, — all these and various other properties point to a class and nature of malady which our present knowledge and mode of regarding disease will not permit us to explain by dislocated fragments of epiblast accidentally included in the fetal tissues, or by any of the other hypotheses by which the ardent supporters of Thiersch and Waldeyer have attempted to fortify their assertion that every epithelial cell must be derived from some previous epithelial cell.

In studying these and many other specimens of carcinoma of the cervix I cannot avoid recalling the time when, sixteen years ago, I was making sections of tissues showing the lesions of tubercle, syphilis and lepra, and wondering why they were all so similar, and so like sarcoma.

viz., a cloud of small cells with some large "epithelioid" cells. Now we understand better the morbid agent in the first three of the above maladies; shall we not learn to separate the anatomical evidence of disease from the disease itself? If we see a charred and splintered tree, we infer the action of the lightning; if we see a lung solidified by pneumonia or tubercle, we infer the presence of the causative agent of those diseases. Shall we continue in cancer to suppose that we have only some exaggerated or depraved action of the normal tissues, or shall we infer that this, also, is a disease of infection, a germ disease, like leprosy or rhino-scleroma? In 1878 Ruge and Veit wrote:—

"If we sum up in a few words the result of histological investigation concerning cancer of the portio vag., we have here, precisely in the spot where canceroid most commonly occurs, most frequently observed the origin of the latter from connective tissue. Cancer of the uterus can grow gradually in an altered portio, or it arises in and from a cauliflower excrescence.

"A second possibility of its origin is from epithelium, from the epithelium of the glands; this is the glandular form. The epithelial origin, in the narrower sense, the development of cancer from the surface epithelium with its epithelial cells, we could never observe with certainty.

"As is especially evident in glandular cancers, carcinoma owes its real origin to an irritation, to an impulse, the nature of which is unknown to us.

"It is possible that cancer, like tuberculosis, will some day be attributed to germs.

"Epithelial processes are not the beginnings of cancer."

I do not, of course, claim that this can be demonstrated at present; perhaps no specific bacterium can be found with our present appliances. Nevertheless, we must have some way of regarding this important question, and I think that we are too much under the influence of a cellular pathology, which regards the changes in the tissues so closely that it is in danger of ignoring the fact that the result of disease is not the disease itself.

The practical deductions which depend on our speculative opinions as to the nature of cancer are of the greatest importance. In the first place, if the disease comes from within, if it is a perverted growth of a part of the tissues, dependent on some original error of development, it is necessarily absurd to try to find, empirically, any medicine which should cure it. Nevertheless, new methods and new medicines are continually coming up, futile, as a rule, it is true. If, however, the disease is an infection of some kind from without, we are justified in trying, empirically,

if as yet vainly, for some remedy which may overcome it. Of more practical importance is the question of the utility of cauterizing the stump or cavity from which a cancer has been removed.

There is a very considerable amount of evidence going to show that surgical interference with a cancer is sometimes followed by a recrudescence of the disease, more rapid and violent than the original disorder. If we consider that the operation opens veins and lymphatics, which sometimes become infected with the morbid agent of cancer, just as acute tuberculosis sometimes comes on after operations around a tuberculous joint, we can better understand why a thorough cautery of the tissues left bare by the removal of a cancer of the cervix should be apparently so useful in lessening the chances of the return of the disease.

Did time suffice I could trace out many other points in which the theory of an infection fits better with the clinical history of cancer than any other. At present I can only say, limiting myself to the cancerous degeneration of hypertrophic glands of the os uteri, that I cannot find that the glands pass by direct transition into a cancerous degeneration; that the glandular hypertrophy precedes and accompanies the inception of cancer of cervix, and in such cases every gland seems to be a focus of intense local excitement, with infiltration of small cells in the neighborhood; that cancer of the cervix occurs almost exclusively in women who have borne children, and, as far as observations go, very largely in those who have long suffered from glandular degeneration of the portio vaginalis cervicis; that we are, therefore, justified in considering the newly-formed glands as *the road* through which the cancerous infection usually enters the tissues, and we are required and obliged to attempt the cure or removal of glandular degeneration of the portio; that all suspicious cases of erosions of the cervix should be early submitted to microscopical examination, by excision of a small wedge of tissue, — a proceeding which under cocaine is neither painful nor difficult; that where the microscope shows glandular degeneration, the surface bare of epithelium, the tissues densely infiltrated with small cells, especially if the woman be fifty or over, we should not say that the microscope only shows chronic inflammation, but that, *while cancer is not proved, it is not excluded*; and we should recommend a free removal or destruction of the suspected tissue.

INCIPIENT CANCER OF THE CERVIX UTERI.

To explain the above paper I have selected a few of the figures used to illustrate it, by projection on a screen, and have added other and better ones. These figures I have made by photographing some of my sections of a specimen of cancer, of the cervix discovered, in its first stages at an autopsy. The specimen was given to me by Prof. Kundrat, of Vienna. The patient had not complained of any such symptoms during life as to lead to an examination or warrant a diagnosis. The gross appearance of the specimen was that of a small ulcer, rather ragged, in a lacerated and "eroded" cervix.

Fig. 1 shows at *a* the normal epithelial covering of the mucous membrane; at *b*, this is broken through rather abruptly, and the rest of the surface is not covered by any mucous membrane, nor is it divided from the subjacent tissues by any regular layer of cells, as is the case in the "erosions" caused by papillary thickening or glandular hypertrophy; at *c* is seen a tortuous blood-vessel running up into the cancerous nodule, of which the processes or pegs are seen in cross section. The rapid increase of the cells raises the cancerous surface at *d*; above the level of the surrounding parts at *e* the mucous membrane reappears. On each side of the cancerous nodule is seen a gland. In that on the left the duct is preserved, while in that on the right it is known from other sections that a duct existed leading up to surface. These glands are seen enlarged in Figs. 2, 3, and 4. Enveloping the glands, and reaching beyond them in every direction, is seen a dark stain covering about half the field. This represents a very active proliferation or immigration of small round cells. For want of any accurate knowledge this is called "an inflammatory reaction of the tissues;" its resemblance to other "inflammatory" accumulations of cells around points of bacterial infection is very striking.

Fig. 2. Above is one of the glands seen in Fig. 1. At *a* and *b* the gland is normal and lined with cylindrical epithelium. To the left of *b* the contour of the gland is lost, and at *c* it is seen again, but it now is represented by a solid epithelial process. This, however, I do not consider to be a transition to a cancerous peg, but a process of rapid growth of the gland in which a lumen will afterwards appear; *d* shows the duct of the gland; *e*, *f*, *i*, cross sections of cancer-pegs; *g*, *h*, a longitudinal section. The centre of the field is occupied by a cancerous mass, which, by shrinking in alcohol, has left a narrow open space. Between this and the gland above the tissue is packed with small cells entirely obscuring the proper muscular uterine cells; *k* is a shadow, caused by improper adjustment of the ray of light in photographing.

Fig. 3 shows the larger gland shown in Fig. 1; towards *a* the cylindrical epithelium lining the gland is still to be seen intact; everywhere else it has disappeared, and is replaced by a thick layer of large cells, forming a ring around the lumen of the gland, seen in the figure, about half an inch wide. At *b* and *c* were apparently processes of the gland, already now destroyed; at *d*, and running up to *a*, there is a thicker mass of larger cells, already seemingly cancerous. In the lumen of the gland is seen a mass of cells which represent the contents of the gland, shrunken by the alcohol.

Fig. 4 shows with a higher power the part of Fig. 3, opposite *a*. In the centre is seen a row of cylindrical epithelium, abruptly terminated at either end by a growth of large cells, *a*, *b*, which, although not arranged in distinct pegs, or processes, are distinctly larger than the small cells with which the tissues adjacent to the gland are crowded. It will be noticed that there is no transition between the cylindrical epithelium and the flat cells. The boundary of each kind is sharp, and gives the idea of a malignant invasion of the lining of the gland. As far as I know, this appearance is pathognomonic of cancer.

Above *c* are seen the nuclei of the cells contained in the lumen of the gland. These cells, also, are large and flat, and it may well be that a cancerous process has invaded the gland at some point, and, growing in its cavity, has secondarily invaded the walls. This explanation is implied more strongly by other sections of the same gland, which are filled quite full of a cancerous mass.

The shadow at *d* is a photographic error. Below the cylindrical cells, between *e* and *f*, the tissues are comparatively normal.

Fig. 5 shows at *a*, *a*, *a*, *a* a cancerous mass, occupying nearly one-fourth of the field. Most of the processes, or pegs, happen to be cut longitudinally. In the right upper corner are the remains of two glands, showing remains of cylindrical epithelium on a level with *e*. Above this, on a level with *d*, a growth of cells has replaced the cylindrical epithelium on both sides of the inner gland and on the left side of the outer gland. Here also there is no transition, but the glandular epithelium is, as it were, eaten up by the invading cells. A dense infiltration of small cells precedes the growth of the cancer, reaching about to a line drawn from *e* to *g*. At *c* is a normal gland. Above *b* is a gland not yet invaded by the cancer, but showing in a high degree the changes mentioned by Ruge and Veit, and described in the next figure. At and near *f* is normal uterine tissue.

Fig. 6 shows the last-mentioned gland with a higher power. At *a* the lining cylindrical epithelium is seen to be growing rapidly, one layer being superimposed on another, forming brush-like projections into the lumen,

Only the nuclei of the very thin and transparent cells are seen in the figure. At *b* the shrinking of the preparation has separated from the walls of the gland the lining of cells, which here show coherent masses. There is no infiltration of the periphery of the gland with a new growth, as in Fig. 3 and Fig. 5, *d*. I hardly think that the changes here ought to be considered as a transitional stage in the process of cancerous degeneration, for similar changes occur in glands, under irritation, when there is no cancer present or impending, as I shall hereafter show. The rapid growth of the epithelium in this case, like the sprouting of solid buds from the gland, as seen in Figs. 2 and 8, seems to be a reaction of the glandular structures, liable to occur from various stimuli, one of which is the proximity of cancer.

Fig. 7. from the same specimen, shows at *a*, *a* a cancerous mass extending two-thirds across the field, broken by a cleft under *c*, where part of the new growth has ulcerated away. The cancer-pegs are seen on both sides of this cleft, and between it and *a*, *a*, — some cut longitudinally and some cut across. On the left, at *b*, are normal glands; between *c*, *c* below is normal uterine tissue, darkened somewhat by a photographic shadow. Over *f* is a cotton fibre, accidentally imbedded in the Canada balsam. Over *d* is a gland which is quite close to the cancer, and surrounded by a growth of small cells.

Fig. 8 shows this gland much enlarged. It seems nearly normal, but on each side is a solid sprout. While this might be due to a simple budding growth, or an accidental section, near the side of an acinus, giving a tessellated appearance from cross section of the cylindrica epithelia, yet there are to be seen signs of incipient degeneration, not by transitional stages or changes of the epithelial lining of the glands, but *by invasion from outside of it*. All around the gland are seen the nuclei of the infiltrating growth of new cells, taking the color strongly in comparison with the nuclei of the cylindrical epithelial cells. Over *b* the former are massed very strongly, and these new highly-stained nuclei can be seen all along the lower edge of the gland wedged in between the cylindrical cells. This is very well marked in the sprout near *a*. It is readily seen that a proliferation of these new and active cells would soon give a picture like that seen in Figs. 3 and 4.

[To be continued.]

ROUTINE WORK IN GYNÆCOLOGY AND THE RELIEF OF PELVIC PAIN.

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No one should attempt routine treatment in this branch without being thoroughly prepared and equipped for it. A suitable couch of convenient height and a nurse for the Sim's position are the first requisites. Some one of the chairs made for this purpose is to be preferred to a table, because less distasteful to the patient. The nurse is essential not only to hold the speculum, but to wait upon the patient and arrange her in position, and a screen should be thrown around the chair to shut it off from the other part of the room, and the physician should not be seen there until the nurse has arranged the patient in position and covered her with a sheet. This latter should never be omitted, as it is a great relief to any patient, but more especially to a modest one, to feel that she is thus protected, and if she can be alone with the nurse a few moments, much of the embarrassment is removed from this trying ordeal.

It would seem hardly necessary to say, that, in examining a patient for the first time, she should be placed upon her back and a digital examination made before the speculum is used. By this method of examination a diagnosis is very materially aided, and in some instances accurately completed. If there is a sensitiveness about the orifice of the vagina which causes the patient to be nervous and restless under this manipulation (a condition often met with in unmarried women), the labia should be separated by the nurse, the secretions wiped away with a pledget of absorbent cotton, and the surface well sprayed with a 4% solution of cocaine. After a few moments' wait it will be found very much less sensitive, and the examination will be facilitated by this diminution of sensibility. A virgin may be examined in this way when chloroform would otherwise be necessary, which is objectionable for many reasons, at the office of the physician.

For obvious reasons, soap is the best lubricant for the finger. It is cleaner and more slippery than oil or vaseline, and more easily removed from the hand, which is soon needed for something else; besides being more agreeable to the patient.

If the patient has borne children, the condition of the perineum is to be noted, as the finger enters the vagina whether it be intact or torn, and if there is a rectocele (bulging of the posterior vaginal wall) or cystocele (bulging of the anterior vaginal wall). Next to be noted is the position

of the cervix uteri. If it is normal, and occupies the centre of the pelvis and roof of the vagina; or if it be turned up against the base of the bladder, which would indicate a retroversion of the fundus; or if it be crowded backwards under Douglas' pouch, which would indicate anteversion of the fundus, unless these malpositions are found upon further examination to be due to some extraneous accumulations.

If the cervix is low in the pelvis, and resting upon the rectum, it will indicate a condition of descent, dependent either upon an increased weight of the organ (as hypertrophy), or a force from above crowding it down. This condition is one most frequently overlooked, and a failure to note it will seriously interfere with a correct diagnosis, or prevent it.

The condition of the rectum must be particularly noted. If it is full, and if its contents are very hard, as felt through the vagina, it will indicate a constipated habit, which may be denied by the patient. The relief of such a condition is sometimes all that is necessary to cure a supposed uterine disease. A case in point will serve to illustrate the force of this assertion.

A married lady applied for examination and treatment of her womb, which she felt sure was not right. Inquiries into her previous history elicited nothing to bear upon a diagnosis, beyond the fact that she had been married a year, had never been pregnant, and had been troubled a little with constipation a few months before, but was now quite regular. For some time she had not felt right about her womb. She had occasional pains in the pelvis, and backache, and some leucorrhœa. Digital examination detected an accumulation the size of a fist posterior to the cervix, which was crowded against the pubes. It was hard, not particularly sensitive to touch, and appeared to be immovable. The rectum below this was quite empty. In spite of her protestations as to the freeness of her bowels, she was sent home to evacuate the rectum by enemas, and given a large dose of sulphate of magnesia. Two days later, upon her return, she declared that there had been fifteen copious watery evacuations. The accumulation was still present, but lower down, and within reach of the finger, in the rectum. Forcible manipulations, conjoined with pressure through the abdominal wall above, removed a hardened mass of fæces which would have required a hammer to crush it. It is needless to say that her recovery was prompt and permanent.

The next thing to be determined is the degree of mobility of the uterus, or if it be fixed in its position; and the condition of the cervix should be observed, viz., if it be normal in size, contour, and to feel, or is hard and indurated, or is elongated or flattened out. And if the patient has borne children, a laceration must be observed, if present; for it can be detected

by the finger, sometimes, when it would be overlooked in a speculum examination.

By conjoined manipulation with one hand on the abdomen, pushing the pelvic contents within reach of the finger in the vagina, the whole pelvis may be explored; and care must be taken to observe well any unnatural fulness or soreness, and the exact location must be determined. The degree of pain elicited by pressure upon any of the pelvic contents must be noted, and great care should be taken not to increase it by undue manipulation. In examining the right ovarian region, it will be found more convenient to use the right index-finger in the vagina, with the left hand on the abdomen, and in examining the left ovarian region, to use the left index-finger in the vagina.

Exploration of the rectum by the finger is often required to establish a diagnosis of extra-uterine disease which was only suggested by the vaginal examination; but it is beyond the scope of this paper to enter into detail upon such examination, which is not often necessary in ordinary gynaecological work of the office.

The digital examination being completed, the next step is to cleanse the hand, and while this is being done, the nurse can turn the patient on her left side and place her in the Sims' position. And in doing this she should be taught to have the skirts well drawn up under the hips, so as to get them out of the way, and to avoid interference with the holding of the speculum.

The speculum should be immersed in warm water and anointed with pure vaseline or soap. Several sizes of the Sims' instrument are required to suit different cases, viz., the vaginal, and several others with blades of different sizes and lengths. In introducing the instrument, practice will render it unnecessary to insert the index-finger with the blade, which will be a saving of time; but care must be taken to get the beak of the blade well back behind the cervix, as severe pain will often be caused if it impinges against or is in front of the cervix, when the nurse begins to retract the perineum; and this should be done gentle and gradually. The entrance of the blade is sometimes retarded and prevented temporarily in a relaxed vagina by a falling forward of the posterior vaginal wall, allowing the blade to pouch the vagina. This must be detected and remedied by depressing the blade held in the hand backwards and towards the sacrum, and pushing the vaginal blade farther in, or the cervix will not be exposed to view.

The next step is a very important one, and requires a great deal of nicety and care, as well as convenient apparatus. The vagina should be well cleansed; for, be the patient ever so neat (and there are many who

are quite the reverse), the vaginal douche cannot be depended upon; but the vagina should be thoroughly cleansed with an antiseptic fluid before the uterine cavity is explored, or an application made to it or the canal. The vagina should be well wiped out with a pledget of absorbent cotton, in the grasp of a pair of long uterine dressing-forceps; and the anterior vaginal wall being pushed forward out of the way with the depressor, the cervix must, in the same way, be freed of all discharge. Then the vagina and cervix must be sprayed with some reliable antiseptic solution, either from a hand-ball atomizer, or by means of the apparatus for compressed air, which will be found very much more convenient. This method of cleansing the vagina, by means of the spray, has been adopted by the writer because he has found it more convenient, more thorough, nicer, and less objectionable to both his patient and himself; and by it there is a great saving of time over any other method tried. By means of a rubber-tube and attachments running from the air receiver, or condenser, to and attached by a hook to a small table at the right side of the examining-chair, upon which the necessary instruments and spray apparatus should be conveniently placed, this is easily accomplished. This table must be on rollers, to make it easily movable for convenience of location. A waste-basket or jar, under the table, and partially concealed from view, will furnish a receptacle for the waste pledgets of cotton, and make whole a complete and convenient system. After the vagina has been sprayed it is again wiped out with absorbent cotton. The solutions which have been used with satisfaction are a saturated solution of hydronaphthol in water, which is claimed to be equal in antiseptic power to a solution of bichloride 1 to 2,000, a saturated solution of boric acid in water, and the two mixed in equal proportions, and the ordinary Dobell's solution, which has been used in the nose, and which consists of

Acidi carbolici	. . . . .	mxxiii
Sodæ bicarb.	}	aa 3ss
Sodæ biborat.		
Glycerine	. . . . .	3ss
Aquæ destillat. ad	. . . . .	3viii

also a 2% sol. of carbolic acid, and, where indicated, solutions of bichloride of different strengths.

Pelvic Pain. — It is essentially important to relieve pain, when present, as quickly and permanently as possible, and to give none when it can be avoided. Pain, ever present, with almost every disordered condition of the pelvis, is that which most often drives the unwilling patient to seek the aid and advice of a physician. If this can be at once relieved her confidence is gained, and she will believe firmly in your ability to cure her;

but if it persists after treatment she becomes discouraged, and doubt enters her mind as to the efficacy of your treatment. Too little attention has been paid to this troublesome symptom, it being passed over as only an evidence of the diseased condition at which we are directing our treatment to be dispelled with the condition which causes it. Pain is too often regarded as a symptom, and especially if we believe it to be slight. But slight pain, constantly endured, becomes a burden of great weight.

Too often is our local treatment followed by an increase, rather than relief, of the pain, which should not be the case. Therefore, the relief of pelvic pain is an important consideration.

The writer has given this subject much thought and attention. The slow results to be gained by the usual mode of treatment of most pelvic disorders is truly often discouraging to the physician, as well as the patient. How to overcome this, and how to quickly afford relief to the patient, is a question which should be seriously considered.

We have seen the good effects of cocaine in acute pain, and we have seen the prompt and permanent relief afforded by its use in sciatica, when properly applied, but we know little, as yet, of its effects in inflammation. Thanks to the efforts of Dr. L. W. Corning, of this city, that much-dreaded malady, sciatica, is no longer a bugbear to the physician.

For the relief of pelvic pain there is no remedy equal to cocaine; and its application is simple. After the vagina has been thoroughly cleansed with the antiseptic spray, it becomes a good absorbing surface, and is then sprayed with a 4 per cent. solution of cocaine directed mostly against the cervix, and a soft unabsorbent cotton tampon, with string attached, either plain or rolled in pulverized boric acid, placed in the vagina, to aid the retention of the solution. This forms an elastic support for the uterus, which is so often needed. Its action is not merely local in the vagina, but it is absorbed by the clean surface, and takes effect upon the whole capillary circulation of the pelvis. One application of this kind will usually relieve all the pain and soreness in simple troubles, and the patient will return with a smile at her next visit, and say that she feels like a new woman. Repeated applications, at intervals of two days, will cure well-marked cases of pelvic congestion and inflammation in a remarkably short time by relieving the capillary engorgement.

But some conditions will not admit the use of vaginal tampons; the pressure existed by them is a source of irritation. In such cases a very thin pledget of absorbent cotton, with string attached, is placed against the cervix to retain the solution in contact with the surface for absorption; or after the solution has been sprayed over the vagina, the wet surface is dusted well with pure powdered boric acid from a powder-blower, which

by absorbing the fluid retains it in the vagina, and which, in itself, acts as a local reliever of congestion.

When a more frequent application of the remedy is deemed advisable a suppository of a half or one grain of cocaine with five or ten grains of cocoa butter, may be introduced into the vagina, by the patient, after she gets into bed at night.. But she should be cautioned to use previously a vaginal douche of hot water, to which has been added some boric acid. Cocaine should never be combined with opium. in any form, as it will produce a very unpleasant condition of depression and collapse.

In two cases in which it was used the effect was the same in both. And it should not be used after a solution of bichloride which decomposes it.

Cocaine has the power of contracting the capillaries, and relieving engorgement; and for this reason it has a very beneficial effect upon all inflamed surfaces which will absorb it. It will, for the same reason, control capillary oozing.

The conditions in which it may be used, and a good effect may be promptly expected, are enumerated below: and the mode of application most appropriate is given with each.

In vaginitis cleanse the vagina well; spray it with a 4 per cent. solution, and dust the surface with pulverized boric acid; and when admissible use one or two tampons of unabsorbent cotton previously rolled in boric acid. The effect will be prompt and satisfactory. In severe cases the application should be repeated every day. In ordinary mild cases once in two days will suffice.

In granular erosion of the cervix with glairy discharge from a heavy congested sensitive uterus, clean away the discharge with absorbent cotton, and remove it from the canal with a suction syringe; spray with the antiseptic solution; wipe the surface dry, and spray with a 4 per cent. solution of cocaine, and dust the vagina and internal surface of the cervical canal with boric acid. Or iodoform may be applied to the canal. But for a constant application the boric acid does better. An occasional application of a gr. x solution of nitrate of silver, or of an astringent solution such as the liq. ferri. subsulphatis diluted with four to six parts of water to one of the subsulphate solution may be required in some cases; but such applications should not be used oftener than once a week, or once in two weeks. Stronger applications, such as tincture of iodine, are never necessary, and are actually hurtful. A trial of the mild treatment recommended above will soon convince any one of its superiority over the severe treatment usually advocated. A tampon should never be left in against an eroded cervix, or even in the vagina where it will touch it, as the additional pressure and friction therefrom irritates, and much harm is often

done, and valuable time lost. It would be wiser to lift the cervix off the rectum, where it rests in the heavy congested state of the uterus, by means of a well-adjusted Smith's pessary, unless contraindicated. If ante flexion or anteversion exists, a Gehrung's pessary may be used.

I crave the privilege of a slight digression here to say that the objection to pessaries has come from their improper use, which is due mainly to the lack of a correct knowledge of the way they should be introduced and fitted. It is a good rule always to introduce a Smith's pessary with the patient in the Sims' position, and never with the patient on the back. The reason for this is obvious; as when the patient is on her side the pressure is relieved from the uterus, and it is more movable, and the vagina is more relaxed, and the pessary can be fitted with more regard to the condition it is to overcome. If a Smith's pessary be fitted in the position on the back, to overcome a flexion, it will invariably be fitted too short, and will be found, upon close examination, to be caught in the bend of the uterus, where it will exert its power to no good, but actual harm. The knee-chest position has not been considered, because it is seldom necessary, and is decidedly objectionable for many reasons. Pessaries for anterior displacements are best introduced with the patient on the back.

Endometritis should be treated by keeping the os patulous for drainage, and cocaine applied to the vagina, as recommended above, and to the endometrium by means of a cotton-wrapped hard-rubber flexible applicator dipped in the solution. After it has passed the internal os the cotton is to be slipped off the applicator and left in position, while the applicator is withdrawn. Then the exposed end of cotton, protruding from the cervix, is to be bathed in the solution with the spray, and left in position for a few moments to allow absorption before the cotton is withdrawn. Caustic applications to the endometrium are to be condemned as not only useless, but actually harmful and dangerous; although advocated by many of our prominent authorities on diseases of women, such practice is behind the age. We do not treat inflammations of the external surface of the body in that way now, then why should we so maltreat a sensitive organ like the uterus? Some conditions contraindicate the use of the applicator to the uterine cavity, and when such is the case we must be content with the application to the vagina alone or until the objection can be overcome.

Cocaine is applicable to all inflammatory conditions of the pelvic organs which it can reach by absorption, and its effects are beneficial and permanent. In acute, sub-acute, and chronic conditions of the ovaries and tubes, and in ordinary chronic inflammations about the uterus, the relief afforded by applications to the vagina, as described above, is prompt

and truly wonderful. When the tubes, ovaries, and even uterus are fixed by adhesions, little more can be expected of it than the relief of the pain and soreness; but this can be promised for it, and the patient can be rendered comfortable, a boon which no other method of treatment can afford her. But the cocaine must be pure and reliable. There are many preparations in the market which are inert, or nearly so.

At the risk of seeming verbose I will cite a case or two to illustrate the assertions made above; but, for the sake of brevity, have taken pains to avoid those with long histories, or those requiring much detail.

CASE 1. — Mrs. L., aged 38, married, with several children, applied for treatment Nov. 17, 1887, complaining of great pain and weight in the pelvis, and pressure on the bladder, with constant desire to urinate, and backache, with inability to ride or walk without the greatest discomfort. Her symptoms, which dated only a week back, she could only attribute to a cold, or perhaps some over-exertion.

The uterus was found slightly anteverted, congested, heavy, and very sensitive. There was no perceptible discharge, although she complained of some leucorrhœa. One application of cocaine, with boric acid tampons to support the uterus, relieved her completely; and no further treatment was necessary.

CASE 2. — Mrs. P., aged 22, married, with one child, eight months old, which she is not nursing, was doing nicely, until a week previous to applying for relief, when she felt that she had taken cold, and since has been troubled with severe pelvic pain, headache, backache, and a profuse leucorrhœa. Examination discovered a highly sensitive uterus, low in the pelvis, and a profuse albuminous discharge from the cervix. The canal was granular, as far up as could be seen, but the mucous membrane of the external surface of the cervix was normal. Cocaine was applied to the vagina and the canal, and the canal was filled with powdered boric acid, and dry tampons of the same, used to support the uterus, applied so as to leave the os free from pressure. She was directed to remove these the next morning. She returned in two days, with no pain and but little discharge. After four or five such applications she was discharged cured.

CASE 3. — Miss C., aged 21, cook, regular, but suffers considerable dysmenorrhœa, mostly of a congestive character. She suffers constantly with backache and pelvic pain, and cannot walk or ride without experiencing intense pain. The uterus was found retroflexed, and there was some cervical catarrh. The uterus was replaced, the vagina sprayed with cocaine, and boric acid tampons placed so as to retain it in position. She returned at the end of a week, had menstruated without pain for the first time in years, and she had no pain or backache, but had not removed

the tampons as instructed to do. A Smith's pessary was introduced, and after a week's treatment she could ride or walk without any discomfort whatever.

CASE 4. — Mrs. G., aged 26 years, mother of one child, two years old, applied for treatment Sept. 19, 1887, complaining of severe pelvic pain, with backache, leucorrhœa, and menorrhagia. Examination discovered a retroflexed uterus, heavy and sensitive, the vagina inflamed, and its surface covered with a purulent discharge, which irritated it, and which came from the uterus. The treatment was cocaine, with boric acid, and dry tampons to support the uterus, which was replaced. Two days later she returned, free from pain and backache. The vagina was normal in appearance, and there was less discharge from the uterus. A Smith's pessary was introduced, and the treatment was continued. Her next menstruation was normal, and she remained free from pain and backache.

My case-book contains the histories of many more cases where pain was the main symptom complained of, and which was promptly relieved by the method of treatment herein advocated, and with it the inflammation or congestion producing it; but this paper is already longer than I at first intended it should be. If what has been written will induce a fair trial of this method, I feel assured by my own observations that it will prove highly satisfactory.

243 W. 54TH STREET.

REPORT OF TWO CASES OF DEATH FOLLOWING CURETTEMENT OF THE UTERUS.

BY A. REEVES JACKSON, A.M., M.D.,

Professor of Gynecology in the College of Physicians and Surgeons of Chicago, etc.

DURING the past few years the uterine curette has been freely recommended for the diagnosis and treatment of various abnormal conditions of the womb, and it is unquestionably, for both these purposes, a valuable instrument. Its employment requires apparently so little skill, its effectiveness is so manifest, its results in many cases are so prompt and obvious, and so little has been said about the possible danger that may arise from its use, that it is not surprising to find it much more frequently resorted to than formerly.

There is a very general impression that curettement of the uterus is a safe procedure, not absolutely safe, of course, for this cannot be said of any wound-producing means, but that it is *almost* free from danger when performed with ordinary modern surgical care and precautions.

This belief is, in my judgment, an unwarranted one, and is the result of erroneous, or rather imperfect, teaching.

Most authors, I am aware, warn against the use of the curette during the existence of pelvic inflammation or its recent sequelæ, at or near a menstrual period, etc., just as they do against the use of the sound, intra-uterine medicinal applications, and ungentle pelvic manipulations of any sort; but scraping of the cavity of the uterus is a very different operation from any of these, and much more dangerous, and it is upon this latter fact that I desire to lay stress, in order to assist in removing the present ill-founded belief in its freedom from danger.

The uterus is usually a patient, non-resenting organ, and therefore has been subjected to a great deal of abuse. Nevertheless, it does sometimes revolt against invasion and injury, although under the most capricious circumstances. The introduction of a sound has frequently been followed by inflammation; so, likewise, has been the placing of a vaginal pessary, and even a digital pelvic examination. On the other hand, the walls of the uterus may be forcibly stretched asunder; its interior mopped with powerful escharotics, its cavity occupied for many consecutive months with sordid foreign substances, tumors imbedded in its walls torn from their attachments, and all without resulting pain, rise of temperature, or quickening of pulse. While this usual tolerance on the part of the uterus should be our warrant for doing what may seem necessary in any given case, the uncertainty of uterine conduct should, at the same time, make us hesitate about using any aggressive means not absolutely demanded.

I am induced to utter these words of warning by the fact that in my own practice there have occurred two instances in which death so rapidly and directly followed upon the use of the curette, that there could be no reasonable doubt as to the cause of the fatal result. In other cases I have seen lesser grades of *congestive* disturbance lasting from one to six or seven days, any one of which might, if unchecked, have gone on to inflammation. These results have appeared among a total of about fifty cases in which I have used the curette.

In addition to the cases herein related I have been furnished with the details of another, in which death, following the use of the instrument, occurred on the third day.

CASE 1. — *Menorrhagia and Metrorrhagia — Curettement of the Uterus — Death from Peritonitis.* — M. E. H. consulted me on January 26, 1882. She was thirty-six years of age, had been married nineteen years, and had two children, the younger of whom was thirteen years old. Menstruation began at fifteen, and presented no unusual features until six years previously, at which time it became markedly more profuse. She

was treated for this symptom, and her physician had removed "something" from the neck of the womb, and then applied "acid." She was benefited for a few months, but the menstrual discharge again became excessive, and intermenstrual bleedings likewise were of frequent occurrence. Many and various remedies were used without apparent benefit.

On July 14 I introduced a tupelo tent, and on the following day, the cervical canal being moderately dilated and the vagina carefully washed with carbolized water, I removed, with the blunt curette, more than a teaspoonful of fungous granulations from the interior of the uterus. This was followed at once by a thorough swabbing of the uterine canal with Churchill's solution of iodine. A cotton tampon saturated with a two and a half per cent. solution of carbolic acid in glycerine was then placed against the os uteri. This dressing was renewed daily, being preceded each time by a thorough syringing of the vagina with warm carbolized water. On the third day the patient had a chill, accompanied by pelvic pain, and followed by quickened pulse and rise of temperature. Prolonged hot-water douches were commenced at once and assiduously used. Symptoms of peritonitis rapidly developed, at first pelvic, and subsequently abdominal, and they continued until the death of the patient, September 5.

CASE 2. — *Persistent Metrorrhagia — Curetting of the Uterus — Death from Pelvic Peritonitis.* — E. D., a large, healthy-appearing woman, applied to me on January 22, 1885. Menstruation commenced at 12, and had always been regular, and in every other respect normal. She had been married three years, and had never been pregnant. During the past year menstruation had become more profuse, and on three occasions was excessive. Latterly, a bloody flow was constant, and at times so abundant that she was no longer able to distinguish the menstrual periods.

I found the uterus of normal size, in proper position, free from tenderness, and noticeable only for a stenosis of the external os uteri. The introduction of the sound to the depth of three-quarters of an inch caused a smart flow of blood. On the following day I introduced a small laminaria tent, which was removed at the end of twenty-four hours, and replaced by a sponge tent, which, after its introduction, was surrounded on all sides by slips of slippery elm, as in my custom when using sponge for dilatation of the cervix. On the day following, the dilatation being sufficient, the patient was etherized, and about a score of pinkish-gray masses, varying in size from that of a grain of barley to a small pea, were removed. Churchill's iodine was then applied to the endometrium.

No bleeding whatever was observed until February 21, — four weeks after the operation, — at which time a discharge, which was thought by the patient to be menstruation, occurred and lasted four days. Eight

days later, namely, March 1, a very profuse bleeding took place, which was checked by tamponing the vagina.

During the next few weeks the patient took ergot, viburnum, hydrastis, and, as applications to the interior of the uterus, I used alum, pure carboic acid, Monsell's solution, zinc chloride, tannin, etc. These all seemed unavailing. In the spring of 1886 I made four or five weekly applications of fused silver nitrate. Following this there was a respite from hæmorrhage, except the menstrual discharges, for three months. Then, without manifest cause, slight, but constant bleeding again appeared.

In the belief that there probably existed some intra-uterine cause for the persistent discharge, I resolved to again dilate and use the curette. Accordingly, on December 23, 1887, the patient being etherized by Dr. J. H. Stowell, I dilated the cervix mechanically, and with the curette removed two unusually large fungoid masses from the interior of the uterus. These were all that could be found.

The patient emerged from the ether complaining of great pain, for which she was given a quarter of a grain of morphia hypodermatically. The pain continued, however, and the dose was repeated during the following night. On the 24th I found the patient still suffering from pain, with pulse 120, and temperature 102°.

Owing to my necessary absence from the city the patient was under the care of Dr. Stowell for the following two days, and no record was kept of the case; but on my return I learned that there had been no abatement of the symptoms, and the temperature had risen to 104 $\frac{4}{5}$, and the pulse was 140. No evidences of abscess were detected. Hot vaginal douches, at a temperature of 120°, were used every four hours, and continued an hour each time; morphia was given in sufficient quantity to assuage pain, but there was no apparent improvement in the patient's condition until the evening of the 30th, when the temperature fell to 100 $\frac{4}{5}$, and the pulse to 120. She now had a tablespoonful of Epsom salts, which, aided by enemata of beef tea, began to operate a few hours later. At midnight symptoms of general prostration supervened, and Dr. W. H. Joy was called in. I joined him later, and found the patient dying. She expired December 31, at 7.30 A.M., eight days after the operation.

Without very extended or diligent research, I find the following two cases similar to the foregoing, in recent medical journals.

Dr. Nilsen reported¹ to the Obstetrical Society of New York a case of death from peritonitis eight days after curetting.

Dr. Wm. Goodell also reports² a case in which a patient died two days after curetting, although he attributes the death to the use of the sponge tent which he had used for dilating the cervical canal.

¹ Amer. Jl. Obs., 1886, p. 276.

² Jl. American Med. Ass., Mar. 13, 1886, p. 283.

THE paper of Dr. Reeves Jackson, published in this number, comes as a timely warning to many who are beginning to feel that they can do almost anything to the uterus with impunity. The skill and experience of Dr. Jackson make it fair to assume that he used every requisite care and caution in these cases, and yet it would not be right to suppose that two deaths in fifty cases of curettement, or 4 per cent., represented the probable or necessary mortality after such an operation, not to mention the various inflammatory or congestive attacks which he reports, where the patients recovered. The nature of the uterus has not changed since the days of Sims and his contemporaries, who taught how liable it is to inflammation after the slightest operative interference. The safety of modern gynecology, its immunity from accidents, and almost uniformly happy convalescence after operations, is not to be attributed to greater manual skill or better judgment, but to the introduction of sublimate irrigation, the thorough cleansing of instrument, fingers, and vagina, and the abolition of tents.

The paper of Dr. Auvard, published in this number, might be applied as well to gynecological operations as to obstetrics, as far as concerns the thorough and minute precautions for cleansing the vagina before operation. Carbolic acid, as usually employed, is entirely unreliable for such a purpose. In order to kill the bacteria which give rise to suppuration, sublimate solution, $\frac{1}{2000}$ for two minutes, is as effective as carbolic solution, $\frac{1}{40}$ for fifteen minutes. The essentials are a thorough cleansing of vagina, instruments, and fingers, no use of tents, and not too much mechanical dilatation, the dorsal position, constant sublimate irrigation $\frac{1}{2000}$ during the operations, and a good rinsing out of the uterine cavity with the sublimate solution after the curetting, together with reasonable skill and gentleness. With these precautions, and with vaginal douches of sublimate solution during convalescence, the operation of curettement need not have any mortality, except by the rarest of accidents.

It happens that the fasciculus of the work of Dr. Martin, which forms a supplement to this number of the *ANNALS*, describes this operation at length, as practised by him and by many others with the greatest safety. Of course where foci of inflammation already exist in the pelvis, all operative interference may be dangerous; but these should be detected before operation. The thanks of the profession are certainly due to Dr. Jackson for publishing his fatal cases.

WE desire to apologize for the errors in the Latin quotation, published in the last number. By accident, the proof was not corrected.

HOFMEIER. — THREE SUCCESSFUL CASES OF CÆSAREAN SECTION. — *Ztsch. f. Geb. u. Gyn. Bd. xiv, H. 1.*

THOUGH the question as to the best method of Cæsarean section may be considered settled in view of the efforts of Säger, and the extraordinary results of Leopold, there is still a necessity for reports of cases bearing upon this subject. This is particularly apparent in view of the necessity which may arise, in a given case, for a choice between Cæsarean section and Porro's operation. Two of the three cases which are reported were operated upon on account of contracted pelvis, the third on account of myoma in the upper portion of the cervix. The latter and one of the former were operated upon by Schröder, the third by the author.

The first patient was thirty-six years of age, and pregnant for the third time. The first pregnancy was concluded by perforation, the second ended in abortion at the third month. The operation was performed when the os was dilated to the width of two fingers. Before the uterus was opened the elastic ligature was applied around the cervix. The child was born alive, and the placenta and membranes were readily detached. In closing the uterine wound the decidua was avoided, none of the muscular tissue was resected, and the sides were brought together with two rows of continuous catgut sutures. A series of interrupted silk sutures, including the remainder of the muscular tissue and the peritonæum was then passed, and over this yet another continuous catgut suture. After the elastic ligature was removed the uterus filled with blood, which was expressed, and the organ did not contract until forcible external irritants had been used. The child was healthy, and the mother made a good recovery. The uterus was still quite large when the patient was discharged from the hospital, and evidently adherent to the anterior abdominal wall. The second patient was thirty-one years old, and pregnant for the fifth time, all the previous pregnancies having terminated disastrously for the children. Cæsarean section was performed at the termination of pregnancy. The uterine wound was closed by means of a row of silk sutures passed through the entire muscular structure of the uterus, at intervals of two or three centimeters, and six or seven in number. The decidua was not included by these sutures, nor was the peritonæum, and they were not tied until after two tiers of catgut sutures had also been passed, which brought the sides of the wound into close apposition. The silk sutures were then tied and cut short and the peritonæum closed over them with a continuous catgut suture. As in the first case the bleeding was profuse after the elastic ligature was removed, and only yielded to long-continued compression.

Mother and child continued to progress favorably, the uterus of the mother being attached to the anterior abdominal wall when she left the hospital. Three months later it was free, movable, and apparently normal.

The third case was that of a woman forty-five years of age, who had had one child fifteen years previous to the operation which is about to be described. She had also had a miscarriage at the third month, which was induced by Schröder in July, 1885, on account of multiple uterine myomata. The placenta did not come away, and after remaining *in situ* for six weeks it was removed with the sharp curette. She again became pregnant, and in spite of an attempt to produce a miscarriage, the pregnancy continued until the seventh month, when she was again brought to Schröder. He decided to allow the case to continue to term, and performed Cæsarean section when labor began. The condition of the uterus necessitated amputation by Porro's method, and the wound was closed as was customary with Schröder after myotomy. Mother and child did well.

The atony of the uterus and profuse hæmorrhage which followed the removal of the elastic ligature in the first and second cases are noteworthy. In Leopold's extensive experience he has not experienced such a mishap. The hæmorrhage may have been caused by too firm or too long-continued constriction of the organ. There was, also, an error in prolonging the incision into the lower segment of the uterus, which Sänger has warned against, as a measure which is very likely to excite hæmorrhage. The children in the last two cases were quite asphyxiated when born. That may have been due to the cutting off of the circulation just before the uterus was opened, with the elastic ligature, or to the doses of morphine which were given to the mothers just before the operation. The success in all these cases was very gratifying, and was believed to be due to the most rigorous antisepsis, to operating early in labor, and to accurate suturing of the uterus.

SCHULTZE. — THE DIAGNOSIS AND TREATMENT OF PERITONEAL ADHESIONS OF THE RETROFLEXED UTERUS AND CORRESPONDINGLY DISLOCATED OVARIES. — *Ztsch. f. Geb. und Gyn. Bd. xiv. H. 1.*

THE adhesive bands and surfaces of attachment of the body of the uterus to the wall of Douglas' space, the rectum, and the posterior wall of the pelvis, were supposed to be the causes of backward displacement of the organ, until clinical observation, upon the living and the dead, showed that they were not. The opinion still prevails in some quarters, however, that they are. Since we know that antelexion is the normal

position of the uterus, it is difficult to believe that a shrinking exudate can join its body to the posterior wall of the pelvis, except in rare instances. The cervix is, in many cases, adherent to the posterior part of the pelvis, in a normal posture; but, in the majority of cases, the body of the organ is primarily retroflexed without adhesions, fixation coming secondarily as a result of intercurrent peritonitis. Claudius is believed to be in error in stating that the normal uterus, in a healthy woman, rests unmoved near the upper border of the posterior wall of the pelvis. Rindfleisch is equally wrong in stating that with each successive pregnancy the uterus becomes more movable, and can assume an anterior or posterior displacement without resulting pathological phenomena, unless the organ becomes adherent. It is admitted, however, that displacements are possible without the appearance of serious symptoms. Adhesions and peritoneal exudates are usually the result of local peritonitis and oöphoritis, caused by precedent displacements of the pelvic organs, and, unless they are disposed of, will prevent satisfactory reposition of those organs. Chronic local pelvic peritonitis seldom occurs without involving the sub-peritoneal connective tissue. In addition to bands and layers of new tissue upon peritoneal surfaces, which have been subjected to inflammation, one also finds scars and indurations. The treatment of these inflammatory processes may require months and years, the object being to promote resorption and reposit displaced organs. In many cases local treatment by massage or a suitable pessary is satisfactory, hæmorrhages being stayed by rest, ice-bags, ergot, or hydrastis, or by the operation of curetting; anæmia by iron and hydrotherapy; and intercurrent oöphoritis and metritis by rest and antiphlogosis. Such patients usually get little comfort out of life, however, until the climacteric, and it is possible that this may be delayed or insufficient. The ideal treatment in these cases is the removal of the cause; and, in the author's opinion, this consists in separating the adhesive bands and releasing and restoring the organs to their proper position and function. He has been practising his method since 1879 with satisfactory results. It consists in placing the anæsthetized patient in the lithotomy position, irrigating the rectum, and emptying it of fecal matter, introducing the index and middle finger of one hand high up in the rectum, and depressing the abdominal wall with the fingers of the other hand, until they meet the fingers in the rectum; the surrounding surfaces are then carefully explored, and adhesions detached by pressure, the separation being usually made, in case of adhesions to the uterus, at the uterine end. The uterus can then be straightened by use of the same forces, and held in position by a suitable pessary. If straightening cannot be accomplished in this way, the uterus is first dilated, a forefinger intro-

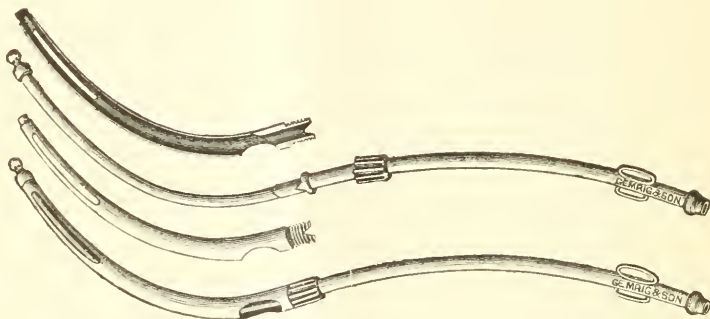
duced to its fundus, and the straightening accomplished with the aid of the external hand; or a large sound may be introduced and manipulated by an assistant, while the operator uses pressure per rectum and externally. If a retroverted uterus is attached along its posterior aspect to the anterior rectal wall, the fingers are introduced into the rectum and the abdomen depressed as before, the organ is steadied by the fingers in the rectum, while the middle finger of the external hand, *carried behind the uterus*, gradually strips the uterus from its fastenings and presses it forward into position. If the bands of adhesion are stretched between the cervix and the body, they may be disposed of by pressure, as in the other instances, or by means of an intra-uterine stem and suitable vaginal pessary. If an examination in a given case has revealed the presence of adhesions to or deposits around the ovaries, they must also be divided and the organs released. Many of the symptoms attending uterine displacements are due to involvement of the ovaries, and will not disappear until both uterus and ovaries are released and replaced. The method of detaching the ovaries is similar to that already described. Too great pressure must not be used, and the pressing finger must be exerted against the adventitious tissue, and not against the ovary. It may happen that after an unsuccessful effort a stimulus to the resorption of the new tissue is excited, so that a second attempt at a subsequent period may be entirely satisfactory as to results. The author reports brilliant consequences from the use of his method upon imprisoned ovaries. He also states that in all his operations of this character upon the uterus and ovaries the patients remained under his immediate oversight until they recovered, and that in no instance was there peritonitis, hæmorrhage (sufficient to excite notice), or formation of inflammatory exudate; and that the operation is, therefore, preferable, as a rule, to laparotomy. There are cases, of course, which must be treated by laparotomy, or by incision through the vagina; yet others would be benefited by Alexander's operation. While he thinks that his method of repositing the uterus in ordinary cases is now adopted by the majority of gynecologists, he admits that they are not favorable to his other methods of procedure which he attributes to misunderstanding. His method, he asserts, does not consist in tearing the uterus away from its adhesions, and replacing it with the exhibition of great force, but in separating adhesions, with moderate force, by means of the fingers, after which the organ may be replaced without difficulty. Hegar thinks his method is not usually practicable, Fritsch finds it possible in some cases, Winckel has seen bad results from it, Schröder opposes it and advises against its use, and Rheinstädter, the most recent German author of a text-book upon gynecology, considers it a dangerous method which ought not to be followed.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

THURSDAY, MARCH 1. 1888.

THOMAS M. DRYSDALE, M.D., in the chair.

DR. H. A. KELLY exhibited an aseptic two-way catheter. A two-way catheter which will conduct and discharge water and solutions with the utmost freedom, and at the same time allow of perfect and ready cleansing after use, is a great desideratum. In the light of the antiseptic surgery of to-day the use of such two-way catheters as were commonly found in the surgeon's bag a few years ago is in the highest degree dangerous, owing to the necessarily painfully tedious process of cleansing and the impossibility of ever being able to assure ourselves that they are clean.



One of the best ever devised for the use of the gynæcologist is Bozeman's. This has been modified by Fritsch and Olshausen in such a way that the delivery-pipe and discharge-pipe are two separate pieces, so made that the delivery-pipe enters the larger discharge-pipe and is held in place by a cap, which is screwed down on it while in use. This will be understood better in examining my modification. The objection to this still held, that although easier to clean than any previous form, it was still difficult, and impossible to assure one's self.

I have now added my own modification to this instrument, making it now perfect in its utility, and answering all antiseptic requirements.

The syringe, as constructed by me, consists of three parts. First, the delivery-tube, which conducts the stream from the hose connected with the reservoir into the uterus. This tube is well curved, and at its entrance is furnished with a knob to hold the hose better. Its extremity ends in a button, with a series of holes around and a little below the outer margin, in the form of a rose, so placed that the stream is thrown out on all sides and directed a little backwards. The remaining two pieces are the two lateral halves of the *exit* pipe, which is attached very simply by entering each end in the shallow collar under this *rose*, bringing them together around the inlet pipe and screwing the nut down on the thread on their upper end.

Each side has a fenestra in it, near the point, and is scooped out near its upper end, so that when the two are fitted together there is a good-sized hole here.

When in use water flies with force from the holes at the end, washes with it *de ritis* and fluid, which enter at once the large fenestra on the sides, are washed down and out of this large hole into the receptacle. When out of use the cap is unscrewed, the halves fall apart, and every part which has come in contact with infection is at once exposed and readily cleaned. The interior ought to be as highly polished as the exterior. Mr. Gemrig, of this city, has made these instruments for me in a very satisfactory manner. He has made one of solid silver for Dr. Sweetnaud, of Canada, which I exhibit here with that I am now using as well as the older form. If the nomenclature is to be kept up as in the past, it is the *Bozeman-Fritsch-Olshausen-Kelly Catheter*.

Dr. KELLY also exhibited a cotton packer. This instrument has been many months on the shelf by my examining-table, and is one of the few I am constantly using. I have showed it to a number of my friends, and at the meeting of the Alumni of the Woman's Hospital in New York this winter. Its use is simply to pick up a loose wad of cotton placed near the vaginal outlet, and, with the vagina properly exposed and the uterus re-dressed, to carry it up into place in the fornices and pack in one wad after another with perfect exactitude and any degree of firmness required. It is made of a delicately tapering handle which balances nicely in the hand, terminating in three diverging tips, a little flattened on the upper and under surfaces.

Dr. B. C. HIRST exhibited the placenta from a case of unioval twins. It was very large in extent, having about twice the ordinary dimensions of a placenta. It formed one mass, with the most intimate anastomosis between the two sets of fetal vessels. There was in this case hydramnion of one fetal sac.

Dr. HIRST also showed a parietal bone, presenting a spoon-shaped depression. It had been taken from an infant that died about two days after birth. The labor had been a difficult one, terminated by the forceps; the child had presented by the vortex in R. O. P. position; the pelvis was slightly flattened, head large, O. F. circumference thirty-six and one-half centimetres. At the corresponding point internally there was a deep, broad depression of the brain-substance. The child apparently died from congestion of and serious effusion into the brain.

Dr. WM. GOODELL remarked that Ambrose Paré had compared these depressions to the indentation on kettle-drums. The indentation in this case was very typical. After turning in the flat and narrow pelvis, these indentations were very marked. They occupied then the temporal region, and not the parietal; the shorter bi-temporal diameter being the one implicated. Hence, in turning, two mechanical advantages resulted, — the small end of the cephalic wedge offered at the conjugate, and also a cephalic diameter shorter than the bi-parietal.

Dr. JOHN C. DA COSTA wished to know if Dr. Goodell thought turning could always be done in these cases. He spoke of a case which had occurred in his practice where the bone was much more depressed than in the specimen shown. The whole left side of the head was bulged in by a large fibroid of the uterus, which fitted into the depression like a mortise and tenon-joint. The pelvis was of good shape and roomy, os uteri wide open and soft, and yet the head, which was at or above the superior strait, in L. O. A. position, would not descend on account of the tumor. As the woman was in good condition, and nothing seemed to be

going wrong, he let her alone for a time. After a little while, by the aid of some manipulation the head began to unlock from the tumor and rotated from O. A. to O. P. position, and the child was delivered alive.

This case could not have been turned (as membranes had been ruptured and uterus gripped the child's body itself), and even if it could have been, there would probably have been a dead baby, from pressure on the cord during the long delay that would ensue in delivering the head, as the tumor would most likely have locked under the baby's chin. The forceps could not be put on, on account of obstruction to the left side by the tumor. Dr. Goodell thought that Dr. Da Costa would have had less trouble if he could have turned the child. He did not think the neck would have been caught. He had been speaking before of the mechanical advantages only, and not of the difficulties in the performance of version.

Dr. W. S. STEWART exhibited an improved obstetric forceps.

It is not my intention to consume the time of this Society by giving the history of the origin and use of the obstetric forceps, nor to enter into a general discussion of its merits and demerits. I take it for granted that there is a large majority admitting their necessity, and the great benefit they are to the lying-in patient; therefore I will content myself in endeavoring to point out the advantages of having parallel handles, so that the application of either blade first can be made at will, as the exigencies of the case may require. It is in order to meet this necessity, which I have more than once experienced, that I have the honor and privilege of presenting for your consideration an instrument which will demonstrate its superiority, and, consequently, can be relied on in almost any emergency. The improvement is not restricted to any special form of blade, but can as readily be applied to the straight as the curved, its use being equally effective with either form.

The first object for which I was most solicitous was to be able to have an instrument which could be used in presentations where it might be desirable to apply the second blade first, as sometimes in the second position of the head when jammed into the cavity of the pelvis and rotation to the antero-posterior diameter has been prevented by a narrow, contracted passage. In all such cases there will be no difficulty in applying and adjusting the first blade, but occasionally it is impossible to apply the second in this condition of the presentation, the only remedy being to reverse the order by applying the second blade first, running the risk of injury to both mother and child in the recrossing of the handles in order that they may be locked before making traction. This we have overcome by having the handles made parallel to each other and without overlapping, as in the ordinary instrument. Each handle has its own independent lock, the two being connected by a plain bar which will admit of adjustment no matter which blade is applied first. To overcome the danger of slipping, and to secure the grasp on the fœtus, it was necessary to devise some method of reversing the direction of the handles in order that traction could be applied. To accomplish this a double lever was devised, one part on each handle, and each working on the same pivot or fulcrum, — to this the traction is applied, resulting in a power perhaps superior to anything we could have expected. The compression to the fœtus is no longer in proportion to the powers in the grip of the hand applied to the instrument, as in the cross handles, but is regulated simply by the resistance to be overcome, and will beautifully illustrate the

mathematical relationship between the force and the resistance; consequently, all fear of slipping of the instrument is obviated, and the only force that is necessary to be applied is for the delivery of the fœtus. The compression is, however, controlled by a shoulder, which is made on the toggle-joint, preventing any risk to the child, and its limit corresponding to the position of the blades of the cross-handle instrument when the handles are in close apposition. Should there be any irregularity of application, and consequent difficulty in locking, we have devised a coned hub with a winged nut which, though the handles may be at an angle of thirty degrees, enables us to adjust them accurately. The advantages of this improvement, as experience has demonstrated, are summarized as follows: First, The application of either blade first. Second, The impossibility of the blades slipping when properly applied. Third, Moderate and even compression, the degree of compression being regulated by the amount of resistance. Fourth, Greater facility for making traction.

Dr. H. A. KELLY had examined these instruments with a great deal of interest, and was surprised how the difficulty of parallel handles had been overcome. He, however, thought that the axis-traction principle should have been added to them.

Dr. BALDY was not particularly fond of using forceps of any kind, and had often seen a head delivered spontaneously on which the use of instruments had been urged. However, there were cases where the instrument became necessary, and in such cases it was desirable to have as perfect a forcep as possible. In the forceps presented he had no objection to make to the parallelism of the handles, but thought that a very serious objection was to be found in the so-called toggle-joint. With this instrument, as it stood, there was no possible way of regulating the compression force applied to the child's head, and although Dr. Stewart had not yet marked or injured a child, he would surely do so sooner or later, if he continued their use. He thought with Dr. Kelly that the axis-traction principle should be applied to modern obstetric forceps.

Dr. G. E. SHOEMAKER had, on a previous occasion, called attention to the dangerous compression power developed by the toggle-joint spoken of by the last speaker. He thought that, to make the instrument safe, there should be an adjustable attachment, such, for instance, as a sliding ring about the handles, to limit at will the compression force, as the present shoulder was fixed, and was too far back.

Dr. LONGAKER found serious objection to the number of joints on the instrument, making it so difficult to keep aseptic. He did not think the Simpson forcep could be improved on.

Dr. STEWART was surprised at the number of objections found with his instrument, as well as at the doubts expressed as to the results in using them. He had now delivered eight children with them without injury. He could deliver cases with his instrument which could not be delivered with any other made. The members must take his word for the results obtained thus far, or go with him and see if there were any evidence of injury to any of the children, as all of them are living on whom the forceps were used.

Dr. LONGAKER presented the following for Dr. HOLMES:—

The case of Mrs. B. 50 years; married at 15 years; nulliparous; menstruation always scant and painful; is remarkable on account of series of reflex symptoms, of

death from exhaustion and from pain, without organic disease other than ovarian, and of simplicity of operation needed, as revealed by autopsy.

Mrs. B. consulted me April, 1886, having been treated elsewhere for muscular rheumatism; pains were of lancinating character along left sciatic, shooting down to ankle. Examination showed ovarian tumor, probably cystic. Prof. Goodell confirmed diagnosis, and advised operation, which the patient then and subsequently refused. The chief complaint was at first the pain posteriorly, along left leg and thigh, which, finally, also involved similar relations on right side. In the course of a few months, a persistent tremor attacked both lower extremities, at first alleviated by manual pressure, subsequently not, and, later still, extended to arms and hands, and, later yet, to muscles of face and lips, giving much the appearance of violent chorea, interfering markedly with clear enunciation.

During the latter part of life there was oft-repeated and painful micturition, with bloody urine, with violent pains, starting in lumbar region and shooting along into the bladder and urethra, raising a strong suspicion of renal calculus.

This, with the other lancinating pains, the tremors and nervous exhaustion consequent upon the many months' illness, caused great suffering, the patient often wringing her hands and grasping her hair in agony. Hypodermics of morphia, $\frac{1}{4}$ to $\frac{1}{2}$ grain, gave markedly greater relief than same doses by mouth or rectum, even frequently repeated. The apparent increase of tumor was very slow.

Autopsy indicated only slight omental adhesions; kidneys healthy. The bladder, uterus, and the two attached cysts were removed a few hours after death. The dermoid cyst has a long, slender pedicle attached to the left cornu uteri. It was situated on the right side of the spinal column, opposite the third and fourth lumbar vertebræ, covered by loops of small intestine and by omentum, to which latter it was slightly adherent. It was at first supposed to be a floating kidney which had undergone conversion into a cyst. Its size, shape, and location were suggestive of such an organ. The cyst contained chocolate-colored sebaceous matter. No hair or teeth. The wall contained calcareous plates. The right ovary is the seat of a multilocular cyst, the size of an average full term foetal head. The corpus uteri is undeveloped, the cervix constituting the larger portion of the organ. Evidences of chronic cystitis were present.

Dr. M. PRICE said that this question was coming up daily; cases of pelvic disease were being constantly treated by the general practitioner for malaria, rheumatism, neuralgia, and other kindred diseases, without making any investigation into the actual condition of the patient. In fact, malaria is becoming extremely fashionable, when there is no apparent reason for the condition. He was then treating a case of ovarian disease in a lady now 47 years old; was married at 15 years; contracted gonorrhœa from her husband at that time; has ever since remained sterile, with scant menstrual discharge and great pain from the approaches of her husband, sometimes the pain being agonizing. She suffers at times from severe pain running down the left leg. Upon examination the ovary was found to be as large as an orange, excessively tender, and when pressure was made in bi-manual examination the patient went into convulsions on the table. He did not know what relation this condition may have had in connection to the trouble in her early married life; of this he was sure, that it was the cause of her barren condition.

Dr. LONGAKER also exhibited the *post-mortem* specimens from a case of carcinoma uteri. The following brief notes of this case are presented for Dr. J. S. Gibbs, L.O.: Married; aged 39; always enjoyed good health until five years ago, when her last child was born. Since that time she had suffered much from pelvic pains. Menstruation had been excessive. Patient first seen in June, 1887, when a diagnosis of carcinoma of the cervix was made. The disease had invaded the vaginal walls and the pelvic cellular tissue. From this date I saw no more of the case until Feb. 6, 1888. She had been free from pain, but hemorrhage persisted. Vaginal examination revealed advance of the disease. It provoked such a profuse hemorrhage that applications of Monsell's solution were required to arrest it. When the hemorrhage was under control, pledgets of cotton saturated with terebene and olive-oil (4) were packed against the cervix, according to the plan of Betrin of Geneva. This medication diminished the offensive odor, but I strongly suspect it had something to do with the rather untimely demise of the patient. In a few hours from the time of the application she sank into a somnolent state from which it was difficult to arouse her, with almost complete suppression of urine and strangury, and death in thirty-six hours. A peculiarity of the case was absence of cachexia and emaciation. Autopsy: The cervix was extensively infiltrated and ulcerated. The corpus shows a few nodules. The ureters are dilated, as are also the pelvis of the kidneys.

Dr. G. E. SHOEMAKER thought that the statement that death was probably due to an application of terebene should be carefully considered. He was constantly using and observing the use of the drug internally in much larger quantities than could be absorbed from such an application, without sign of irritation. Might not the death from uræmia have occurred independent of its use?

Dr. LONGAKER believed that the application of the terebene did hasten death. The strangury and suppression came on quickly after it had been used. The case lacked some of the ordinary symptoms of uræmia.

Dr. WILLIAM GOODELL exhibited a specimen of conjoined twins, which had been presented to him by Dr. Junius F. Fuller, of Roxborough, N.C. The specimen was a perfect one, — the bodies were united at the hips, and there were three feet in common. Some years ago an analogous living specimen of conjoined twins was on exhibition in this city, and he had brought them before his class at the University, and had given a lecture upon the subject. From investigations then made he found that this form of conjoined twins was not a very rare one, as Aldrovandus and other old writers had described and figured them. The specimen which he presented must have been aborted at the third month of utero-gestation.

Dr. GOODELL also presented a specimen of hydro-salpinx. It was the largest specimen he had ever seen; although he had met with much larger specimens of pyo-salpinx. The case had been treated by many gynecologists, and the true condition had not been recognized. There had followed the operation a complete relief from pelvic pains, but menstruation had continued up to the present time. The periods were, however, becoming less frequent. Since it was contended by some eminent surgeons that when menstruation continued after the removal of the uterine appendages, some of the ovarian stroma must have been left behind, he wished to call the attention of the Society to the complete extirpation in this case of

both ovaries and tubes. Although the former were more or less adherent, it was evident from the specimen that not a particle of ovarian stroma was left behind.

Dr. M. PRICE said he had seen two cases in his practice where the menstrual discharge did not cease after the removal of the appendages. In one case it lasted for a year and a half, in the other, six months. He had no doubt but that Dr. Goodell's case would show the same result. There was but little doubt in the mind of most operators that the removal had not been complete.

J. M. BALDY,

Secretary.

Dr. W. H. H. GITTREUS, who resigned the secretaryship of the Philadelphia Obstetrical Society the first of the year, after an uninterrupted service of eleven years, was presented this evening, in the name of the Society, with a very handsome mantel set (including clock and side ornaments), in recognition of the very valuable services he had rendered the Society during his long term in office.

Officers of the Philadelphia Obstetrical Society for the ensuing year: — *President*, Thomas M. Drysdale, M.D.; *Vice-Presidents*, Charles H. Thomas, M.D., J. C. Da Costa, M.D.; *Secretary*, J. M. Baldy, M.D.; *Treasurer*, Alfred Whelen, M.D.; *Curator*, T. Hewson Bradford, M.D.

DETROIT GYNÆCOLOGICAL SOCIETY.

STATED MEETING, Jan. 5, 1888.

THE Society met at the office of Dr. MANTON, the president; Dr. E. W. JENKS in the chair.

An interesting communication was presented by Dr. DAVENDORF on "Gynæcologist *vs.* Obstetrician," in which he said that the gynæcologist and the obstetrician are different types. The one a man of action, of instruments, and reliance upon himself, first and foremost; the other a man of patience, and reliance upon nature, primarily. The one deals with pathological conditions, which need his correcting influence; the other presides over a physiological function, and is taught, or should be, not to interfere until obliged to do so.

But is not the spirit of the gynæcologist predominating at the present, and is its influence on the study and practice of obstetrics beneficial?

Discussion.

Dr. LONGYEAR.—I have little to say in reply to our pessimistic friend, who seems to take such a sombre view of the progress of gynæcology. It may be that the embryo gynæcologist, by over-enthusiasm, exhibits a tendency to too prior instrumental interference in obstetrics; but this should be classed to the inexperience and blunders of the operators, and not to the science of gynæcology. No rule can be had in this matter, as so much depends on individual attainment and judgment in each case. One man may have peculiar skill in using certain instruments or methods, which, in less skilful hands, would be pronounced useless or dangerous. Thus what

would be rash for one to undertake might be a very common proceeding for another. The idea that the gynecologist is an extremist comes, to a great extent, I believe, from the fact that the specialist is constantly introducing improved and new methods of treatment, and these, of course, are looked upon with some suspicion, until proved to be of value.

Dr. TAPPY. — It may be true that some who are practising gynecology as a specialty are rather more inclined to interfere with instruments, for their specialty cannot be practised without them; but I should say that, in reference to a case of obstetrics, this would depend more upon the practitioner's individual characteristics, and upon his good or poor judgment, than upon the fact that he is a gynecologist.

Dr. CARSTENS remarked that the reader of the paper did not say what should be done, but merely ask a question. He (Dr. Carstens) has always held the opinion that no man is fit to practise a specialty who is not thoroughly conversant with general medicine. If a patient has a sore eye, the physician must know whether it is due to a diseased condition of the womb, or to some other trouble. To practise a specialty, it requires mental equilibrium.

If a physician is affected with a mania for operating, as many are in Europe, and removes the uterus for some slight fungosity of its lining membrane, it will not be long before the general practitioner has found him out, and denounced his practice.

Dr. GILBERT said that he understood that there were many procedures which ought not to be indulged in. In medicine, as in everything else, there is an idea. The whole profession is *science*, but the difficulty is how to grasp the details of this science.

We are dealing with physical forces and laws, and if we interfere with them, they will either crush us or the patient.

Here is a case of obstetrics which has dragged along for three or four days. Shall we interfere, or shall we wait? Shall we ask the profession or the public in regard to this? No. Who can tell him when he shall interfere? In his own case, as a young man, he (Dr. Gilbert) had waited longer — the result of limited experience and timidity — than he did after he became older and more skilful. For himself he laid down the law some years ago, not to attribute a bad motive, when he could find a good one, for a man's action. If he understood the paper read this evening, it was expressed that we must not unnecessarily interfere in obstetrical cases. But who is to decide this? He could not answer it; we must follow the great teachers. There are cases where we must act on the spur of the moment, and the man who is best prepared acts best. There appears to be a general feeling abroad that there is too much interference. I believe that if we could be induced to wait longer, in many cases, the end would be accomplished without mechanical assistance. I have seen chloroform do what instruments failed to do, and without any of the risks that attend the use of instruments. But to rush matters through is too often the chief motive for mechanical appliances. When and how to interfere should never be lost sight of. But any contention between the specialist and general practitioner, as to method of treatment, is sheer folly. Let each do all he can, so that he does it well.

Dr. CHITTICK said that, in his opinion, instrumental interference depended upon

the individual practitioner. There is enough legitimate work for the specialist, and he believed in specialism. Young men just entering practice think that they must go into gynæcology; but this, he thought, was a mistake. He did not handle local diseases of women himself, but always referred such to one of the specialists in this Society.

Dr. MANTON. — There seems to be a desire on the part of the general practitioner to ridicule gynæcology and the gynæcological specialist. This undoubtedly is due to the fact that it is well known that a goodly proportion of a physician's revenue comes from female patients. For this reason the newly graduated doctor invests in a speculum and a bag, and goes about swabbing out vaginas with tincture of iodine, and applying glycerine cotton to the cervix. He feels that there is money in thus doing, and so keeps right along, whether he knows anything about the case or not. After a time the patient gets tired of this tinkering, and goes to another physician, leaving the first to ridicule the specialty and specialists. Because practitioners think, though erroneously, that they can do a patient no harm, they go on blindly with their local treatment; if the case were one of the eye or ear or throat, they would undoubtedly send the patient to a specialist. I hold that this is all wrong, and that if the general practitioner was more willing to support specialists in every department, it would not in the least detract from his own reputation, nor greatly deplete his pocket-book. Certainly the names of the leading gynæcologists in this country and abroad are on a par with those in other departments of medicine and surgery, and it cannot be denied that gynæcology has rendered the highest service in relieving human suffering.

Dr. DAVENDORF, in closing the discussion, said: Far be it from me to detract from the good name of the gynæcologist. No one will more gladly bear testimony to the great good they have done and are doing, than I. But the question of my paper is: Is not the spirit of gynæcology overshadowing obstetrics? I do not fear this influence in the practice of any gentleman here this evening, or of any among our acquaintance, perhaps. But what is the effect of this influence upon the students of obstetrics who are being sent out to practise? Do the cases of midwifery in our private practice do better than our fathers' cases?

Verbal Communications.

The President said that he had long since become convinced that so much sponging upon a delicate membrane, like the peritoneum, as is usually done in ovariectomy, is positively injurious. In a case upon which he had operated the previous week, the tumor weighed fifty to sixty pounds, was very friable, and of four years' standing. During the operation there was a good deal of hæmorrhage, and, consequently, a considerable amount of blood must have entered the abdominal cavity. The traction on the stump seemed to produce a good deal of shock, so that the abdomen had to be closed without delay. In this case, he, the President, did not place a single sponge in the peritoneum cavity, but washed out with hot water, and put in a drainage-tube. It is now the fifth day, and there has been no elevation of temperature above 100 $\frac{1}{2}$ °, and the patient is now in a fair way to recovery.

The President also reported a case to which he had been called in consultation about a week after delivery. There had been placenta prævia present. Since the

delivery there had been increasing pain in the left ankle, and patient complained of coldness of the part. There was no reddening or swelling, but the foot assumed a darkened hue, which finally became almost black. This condition has continued, and the attending physician tells him that the foot will undoubtedly have to be amputated. One curious feature in the case is that the foot is intensely hyperæsthetic. I have my own theory, but I would like the opinion of the Society as to the cause of this peculiar condition?

An informal discussion of this interesting case then took place, the general opinion being that the case was one of embolism.

The President exhibited H. M. Sims' abdominal plate and pins for hysterectomy, and two drainage-tubes for abdominal cases.

W. P. MANTON, M.D.,

Editor.

STATED MEETING, Feb. 1, 1888.

The Society met at the office of Dr. MANTON, the president; Dr. E. W. JENKS in the chair.

Written Communication.

Dr. A. W. IMRIE read an inaugural paper on "Parametritis," giving the etiology, symptoms, and cause of the disease, and illustrating his remarks by the histories of several cases. (This paper will appear in a subsequent number of this Journal.)

The secretary read a valuable and instructive paper by Dr. A. RILEY JACKSON, of Chicago, an honorary fellow of the Society, entitled, "Report of two cases of death following curettement of the Uterus." (See p. 311.)

Discussion.

Dr. IMRIE remarked that great care should be exercised in all intra-uterine manipulations, as even the introduction of a sound may produce disastrous results.

Dr. LONGYEAR said it occurred to him that the very severe inflammation recorded in the last case might have been set up by the dilatation. He thought that extensive dilatation, with a strong dilator, is apt to do more harm than the curettement.

In the second case, the chill and other symptoms occurring as late as the third day would seem to indicate a septic infection.

Dr. WARNER had had some experience with the evils which may follow the use of the curette, but had never seen death result. In one case pelvic abscess followed intra-uterine curettement, — the patient dying at a later period of meningitis.

In another case, during the first few days, there had been considerable febrile disturbance.

She (Dr. Warner) had always considered the blunt curette as a perfectly harmless instrument, if properly used, and had repeatedly employed it in her office practice without untoward results. She had always looked upon mechanical dilatation as free from danger, when properly carried out.

Dr. GILBERT asked if the simple dilatation of a perfectly healthy uterus is ever

followed by death, as is the case after curettement. Might this not light up some old trouble, and so lead to a fatal termination?

Dr. MANTON replied to this by saying that, while he had no statistics at hand, he was under the impression that deaths following rapid dilatation had been reported. The paper by Dr. Jackson was a very valuable one, showing, as it did, the possible results of a comparatively simple operation. From his own experience, however, he was inclined to think that death, in the cases reported, was due to some other cause than the curettement *per se*. His experience had taught him that the uterus is a very tolerant organ, if properly handled; and, granting the absence of all outside conditions, such as previous pelvic inflammation, etc., under proper antiseptic precautions, he must still consider curettement as a harmless operation in skilful hands. Aside from the ordinary pelvic conditions, which would contraindicate curetting of the uterus, he thought that disease of the Fallopian tubes was very often overlooked. Frequently, indeed, these conditions are too slight to be diagnosed, and are unsuspected until revealed on the post-mortem table,—as pointed out by Dr. Grigg, in a recent paper before the British Gynæcological Society. He (Dr. Manton) thought it not improbable that a diseased condition of the tubes in Dr. Jackson's cases might have led to the unfortunate results.

Dr. JENKS.—The cases are very interesting and instructive. I have never had a fatal termination, but I can recall a number of cases where the results were serious. I have always made it a rule for such an operation to ascertain the tolerance of the uterus. If I find the uterus tender and affected by areolar hyperplasia, I would not undertake the treatment. I remember that Dr. Emmet sounded the alarm in regard to the curette, and wondered that Dr. Thomas could laud the instrument. I think that when we hear of such cases, before proceeding to condemn the curette, we should look to see if there are not other reasons for the fatal termination.

(To be continued.)

THE OPERATIVE TREATMENT OF RETROVERSIO-FLEXIO UTERI.—SAENGER (*Centr. f. Gyn.*, Jan. 14, 21, 1888).

THE number of cases of retroversion of the uterus in which treatment by means of pessaries is unsuccessful is so great that other means of treatment are imperatively called for. The necessary elements for successful treatment by operative means are safety, certainty, and restoration of the organ to its physiological condition, and it is admitted that no such ideal method has as yet been devised. The author divides the methods of treatment, which have thus far been proposed, into two classes, the direct and the indirect. The latter consists in remedial measures upon the defects in the perinæum and prolapsus of the vagina and uterus; the closure of deep fissures of the cervix; amputation of the whole or a portion of the

portio-vaginalis; removal by laparotomy of tumors which cause retroflexion of the uterus; removal of the ovaries; and separation of adhesions by Schultze's method. The direct consists in the method of Rabenau, that is, the resection of the anterior vaginal wall; the Alquié-Alexander operation, or shortening of the round ligaments; and the ventral fixation of the uterus after laparotomy. The history of the latter operation is divided into the following stages or periods:—

1. Koeberle's operation, performed in 1877 for retroflexion, and consisting in the removal of both ovaries, and securing the stumps of both ovarian ligaments in the abdominal wound; also Hennig's, which consisted in securing the right ovarian ligament and the left *ala vesperilionis* in the lower angle of the abdominal wound.

2. Ovariectomy or castration, and suturing of one ligament in the abdominal wound, after the method of Olshausen, Saenger, and others.

3. Castration and suturing of the *fundus uteri* to the abdominal wall by one suture, after Tait's method; by suturing with chromic-catgut sutures, after Czerny's method.

4. Castration and suturing of the stump of one ligament to the abdominal wall, after Kelly's method.

5. Ovariectomy and suturing of the stumps of both ligaments to the abdominal wall, according to the method of Olshausen and Saenger.

6. Suturing of the *cornua uteri*, including the round and broad ligaments, to the anterior abdominal wall, without castration, — Saenger's *ventro-fixatio-uteri-retroflexi*.

Saenger's experience includes two cases of variety number 2, three of number 5, and two of number 6, the latter being the first recorded instances of a deliberate attempt to secure fixation of the uterus to the abdominal wall to cure retroflexion. In these two operations three worm-gut sutures were secured at one end, in each uterine horn, the other end being carried through the abdominal tissues and secured externally. The first suture was passed through the round ligament at its junction with the uterus, the second and third at short intervals below the first, through the anterior lamella of the broad ligament. The propriety of doing this operation after removal of the ovaries has been recognized by Hegar and Fritsch in their publications, and Saenger considers that it is indicated in all cases in which there is or is not fixation of the retroflexed organ, if there is reason for believing that it will be a source of future trouble. An element of danger must be recognized in the possible lodgment of intestines between the two lines of sutures, by which the uterus is secured to the abdominal wall. This danger is small, however, and can usually be avoided by suitable precautions when the sutures are passed. The recommendation

of Caneva, to attach the fundus uteri to the abdominal wall without opening the peritonæal cavity, carries with it the risk of wounding the intestines, and is, therefore, believed to be impracticable. Among other possible means of treatment for backward displacements, Saenger suggests transverse incision through the posterior vaginal wall, close to the cervix, and, perhaps, with the Paquelin cautery, and shortening of the posterior suspensory ligaments, or the opening of Douglas' pouch and insertion of a tampon of iodoform gauze to excite an aseptic adhesive inflammatory process, with subsequent retraction of the cervix, in imitation of the spontaneous cure of retroversion which has been observed after an intermediate attack of *parametritis posterior* and pelvic peritonitis in Douglas' pouch. Curative inflammations may also, possibly, be excited by injections of alcohol into the retro-cervical tissue, and into the folds of Douglas' pouch. The suggestions of Schultze may also be practicable for some cases of retroflexion with adhesions: namely, to cut transversely through the posterior vaginal wall, draw down and open the peritonæum, introduce the finger into the abdominal cavity, release and replace the adherent uterus and ovaries, and then by means of sutures connecting the peritonæum with the posterior vaginal wall to so shorten the latter that the cervix will be drawn far back in the pelvis. Theories are also advanced for operative treatment by means of an incision in the anterior vaginal wall, but the author admits that he has not yet had opportunity to put them to a practical test.

HOSPITAL REPORTS.

Gynecian Hospital, Philadelphia.

REPORTED BY CHARLES B. PENROSE, M.D.

CASE I.—L. S.; black; age, 22 years; married two years; children, two, last three months old; miscarriage, one, two years ago; came to Philadelphia Dispensary Jan. 5, 1888. Sick since first child, three years ago; complains of pain and burning in left ovarian region. Pain increased by motion and defecation; very costive. Examination showed left appendages enlarged, tender, and adherent. Diagnosis: abscess of left ovary. Abdominal section, Jan. 11, 1888; removal of the appendages; right appendages healthy; left ovary completely destroyed by abscess, size of English walnut; left tube completely occluded; walls one-fourth inch in

thickness; muco-purulent contents; adhesions general and firm, especially to intestine; tube very friable, and broke at cornu in removal; irrigation and glass drainage; Penrose operated. Recovery rapid and complete. Patient took care of the following:—

CASE II.—N. S.; black; aged 27; married seven years; children, three, last 7 years old; miscarriage, none; came to Philadelphia Dispensary Jan. 5, 1888. First labor, twelve years ago, was instrumental; complaining ever since of pain in back and ovarian regions; menses regular; very costive. Examination showed inside tear of perineum; small cysto- and recto-vaginoceles; cervix notched; uterus in good position, with double tubal and ovarian trouble, especially marked on right side, where the tumor felt like an exostosis of pelvis; abdominal section, Feb. 6, 1888. Removal of appendages, omentum firmly adherent to and had to be torn from pelvis; right tube large and completely occluded; right ovary cystic; left tube smaller, but occluded; left ovary cystic; general and very firm adhesions; irrigation and glass drainage on account of bleeding from torn adhesions. Price operated: case now convalescent.

CASE III.—M. R.; white; aged 21 years; married two years; child, one, 1 year old; miscarriage, one, three months ago; came to Philadelphia Dispensary Jan. 30, 1888, complaining since labor of pain and burning in left ovarian region. Bed-fast since confinement until very recently.

Examination.—Inflammation of orifice of vulvo-vaginal glands; purulent vaginal discharge; abraded surface about urethra; enlarged and tender tubes on both sides. Diagnosis: gonorrhoea and double pyosalpinx. Abdominal section at Gynecian Hospital, Feb. 3, 1888; removal of appendages; omentum adherent to pelvic contents; left tube distended with pus; blood cyst of left ovary size of duck egg, which ruptured during removal; right ovary adherent; right tube free; fimbriae healthy, but with a dilatation size of marble and hard as fibroid at cornual end. Irrigation and drainage. Penrose operated. Case sitting up now.

CASE IV.—C. S.; black; aged 30; married ten years; never pregnant; came to Philadelphia Dispensary, Oct. 21, 1887, complaining of pain in ovarian regions. Menses regular; micturition frequent.

Examination.—Uterus enlarged and low down; pelvis choked with irregular masses boggy to touch. Diagnosis: tumor probably fibroid. Abdominal section, Feb. 7, 1888, at Gynecian Hospital. Removal of appendages. Right appendages adherent, with blood cyst of right ovary, large as duck egg, which ruptured in removal. Left appendages adherent, with dermoid cyst of left ovary size of large orange. Uterus size of pregnant uterus of three months, with subperitoneal and interstitial fibroids. Irrigation and drainage. Penrose operated.

CASE V.—M. C. ; white ; aged 32 ; married fifteen years ; children, four, last seven years old : miscarriages, two, last eleven years ago ; came to Philadelphia Dispensary in April, 1884 ; under treatment two years, for syphilis and retroversion. Returned Jan. 31, 1888, complaining of great pain in left side, and bleeding for thirteen days. The hæmorrhage was controlled by hydrastis.

Examination. — Uterus very small and retroposed ; tender cystic mass on left side. Abdominal section, Feb. 10, 1888 ; removal of appendages ; right tube normal ; right ovary adherent, containing two thin-walled blood cysts, each size of hen's egg ; left tube distended at fimbriated end to size of orange by clots, membranes, etc ; left ovary independent of this mass ; cysts ruptured in removal ; the outer half of tube was occupied by fœtal sac and contents. Fimbriæ inverted and adherent. Irrigation and drainage. Penrose operated.

CASE VI.—E. N. ; white ; aged 37 ; married eighteen years ; child, one, 16 years old ; miscarriage, one, fourteen years ago ; came under observation in Nov., 1886, with following history : Suffering for twelve years with pelvic pain, especially on left side ; high temperature, at times with chills ; progressive emaciation ; constant nausea ; vesical and rectal pain. Locomotion was impossible. General abdominal tenderness.

Examination. — Uterus slightly retroposed ; hard nodular masses filling hollow of sacrum, and intimately adherent on left side posterior. Abdominal section, Nov. 14, 1886 : removal of left appendages ; left ovary large and cystic : left tube adherent to cyst ; salpingitis, with muco-purulent contents. Recovery rapid and complete. Dec. 20, 1886, went to her home, entirely free from pain and with remarkable general improvement. Felt perfectly well for ten months after operation, when symptoms of pain, etc., returned, and were referred to right side ; great emaciation, and loss of spirits. Abdominal section, Feb. 11, 1888. Removal of right appendages ; left side perfectly healthy : no evidence of former operation, except absence of tube and ovary ; no cornual thickening ; right appendages firmly adherent, and under fundus ut. ; some adhesions cut with scissors ; salpingitis, with fimbriated end of tube occluded ; ovary enlarged and cystic ; one blood cyst size of chestnut ; surface of ovary studded with minute vesicles, in size from pin-head to grape-seed, giving a sensation of sand or grit to finger ; no irrigation nor drainage. Dry dressing ; operation concluded in twenty minutes. Price operated.

CASE VII.—M. W. ; black ; aged 26 ; married four years ; never pregnant ; came to Philadelphia Dispensary Feb. 10, 1888, complaining since Aug., 1887, of severe pain in both ovarian regions. Pain increased by locomotion and defæcation.

Examination. Uterus in good position, with large and exquisitely tender masses on both sides. Diagnosis: double pyosalpinx. Sent to Gynecian Hospital, with high temperature, rapid pulse, and abdominal tenderness and tympany; chills and bad cough. Abdominal section, Feb. 15, 1888. Peritoneum thickened and congested; about eight ounces thin purulent discharge flowed from abdominal wound; intestines congested and covered with lymph; omentum thick, stiff, and covered with lymph; both tubes distended with pus to size of sausage; right tube about six inches in length; left about four inches; right ovary size of duck egg, with blood cyst; left ovary normal in size, with cystic degeneration. General very firm adhesions; much purulent discharge from vagina during operation; general abdominal irrigation and drainage. Operator, Price. This woman's husband's first wife, a young girl, was sterile, sick from marriage with pelvic trouble, and died after three years, with peritonitis and pus pouring from vagina and rectum. The husband recognized that the condition of the second wife was similar to that of the first, and that she was dying. Tube out second day. Doing wonderfully well.

TWO CASES OF PAROVARIAN CYST. — RECOVERY. — MURDOCK FREE SURGICAL HOSPITAL FOR WOMEN. — SERVICE OF DR. E. W. CUSHING. — REPORTED BY F. L. BURT, M.D., HOUSE SURGEON.

CASE I. — This case is an interesting one on account of its being associated with pregnancy. Mrs. X, of Malden, entered the hospital January 24, 1888, for relief of abdominal enlargement. Her menses commenced at 16 years 9 months. She never suffered with her catamenia at all. Married at 23; is now 37, and was never pregnant, although desiring to conceive. Always perfectly regular until August, 1887, when she last menstruated. In August, 1886, she first noticed that she was increasing in size, and this process went on very slowly until August, 1887, since which time the abdominal measurements have very noticeably increased. It has given her no trouble whatever, except slight inconvenience from the weight, and aside from that she presents the appearance of a remarkably healthy woman, in no way reduced in strength or flesh. Examination revealed an abdominal tumor about the size of a man's head, to the left and above the uterus, and only slightly below the umbilicus at its lower border. It was rather soft, gave the sense of fluctuation, and was diagnosed as a cyst. Below and to the right was a mass somewhat firmer, concerning the nature of which it was uncertain.

On January 31, 1888, laparotomy was performed. A tumor was

found in the hypogastrium, evidently the uterus, and the size corresponded well with the time of absent menses. A cyst, which, with its contents (clear, serous fluid), weighed fifteen and one-half pounds, was found above and to the left, occupying the umbilical square and epigastrium, and attached by a broad pedicle to the right cornu and right side of the fundus of the uterus and to the whole of the broad ligament. The pedicle carried the left ovary, which was distinct from the tumor. It was formed of the folds of the broad ligament, which, by being dragged and stretched, had lifted that part of the peritonæum carrying the insertion of the mesentery of the large intestine, thus simulating adhesion. A circular incision around the pedicle was made, the cyst was enucleated, and the bleeding, cup-shaped cavity was sutured off with the shoemaker stitch. Adjacent to the uterus was a large, venous plexus, which bled very freely ~~before~~ applying the suture, a part of which pierced the uterine tissue. The veins of the broad ligament, some of them three-eighths inch in diameter, anastomosed very freely with veins on the cyst wall. The wound was closed according to the usual method, with catgut in layers, and sealed with iodoform collodion. No shock or hæmorrhage followed. Recovery uninterrupted. Movements of child were felt a week after operation. Discharged well March 3.

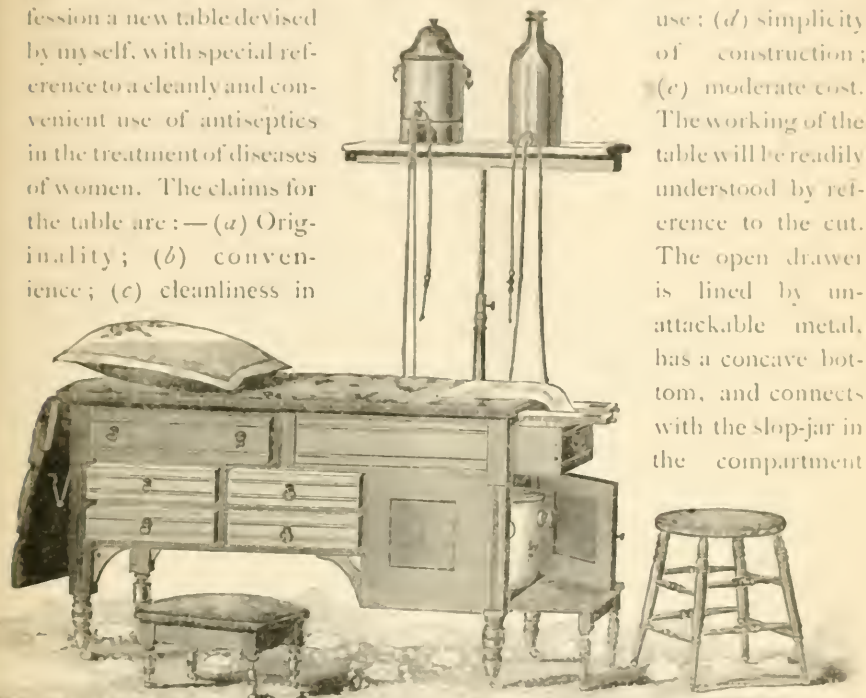
CASE II. — Miss X, aged 52, entered the hospital December 27, 1887. She had never suffered, except from the present condition, which gave the feeling of pressure. Menses at 13; last appearance nearly eight years ago; always regular, and seldom at all painful. No urinary trouble. Bowels regular, usually. No vaginal discharge. Sixteen years ago there began to be abdominal enlargement. There has been a constant though very gradual growth during these years, until now she presents the appearance in size of one pregnant from seven to eight months. She feels a sense of smarting in the right inguinal region. Has frequent sick headaches. She is somewhat reduced in flesh, and of a careworn appearance.

Examination showed a tumor, — without doubt a cyst, — and operation proved it to be parovarian. Laparotomy was performed on January 20. Sac easily found and evacuated. Sac and contents weighed seventeen pounds, — clear, straw-colored fluid. It was found to be attached over the whole surface of the right broad ligament. No pedicle. The peritoneal surface was torn through all around the cyst, and the latter enucleated, and the surfaces of attachment of vessels were sutured off with shoemaker's stitch. No hæmorrhage, no shock. Peritonæum, sheath of muscles, fascia, and skin sutured with catgut in layers, and the wound sealed. Discharged well February 20.

A NEW TABLE.

BY A. H. CARPENTER, M.D., CLEVELAND, OHIO.

THE marked attention which has of late been paid to the subject of gynecological antiseptics prompts me to bring to the notice of the profession a new table devised by myself, with special reference to a cleanly and convenient use of antiseptics in the treatment of diseases of women. The claims for the table are:—(a) Originality; (b) convenience; (c) cleanliness in



(d) simplicity of construction; (e) moderate cost. The working of the table will be readily understood by reference to the cut. The open drawer is lined by unattackable metal, has a concave bottom, and connects with the slop-jar in the compartment

beneath. To operate the table, the patient should be placed in position, with the clothing pushed back beneath the hips, the latter being drawn well forward; a piece of rubber cloth is next placed beneath the buttocks, and arranged in such a manner as to conduct the fluid used into the drawer, thus protecting the clothing and table from wetting. Any amount of water can be used, and the patient's clothing not soiled in the least. At the finish of the examination, or treatment, the rubber cloth is allowed to drop into the drawer, together with the instruments used; the drawer is then closed, the patient removed from the table, and sees nothing of bowls of water or instruments, or, in fact, anything tending to produce unpleasant impressions. The table is provided with a "Sims' position" and an arrangement for adjusting the stirrups, is free from mechanical clatter, and is neither patented nor manufactured for sale. By reference to the cut the table can be easily duplicated by any cabinet-maker.

AMERICAN MEDICAL ASSOCIATION.

THE next meeting of the American Medical Association, to be held at Cincinnati, May 8-11, promises to be one of great interest. The section of Obstetrics and Gynæcology has this full list of valuable papers: —

First Day. — Chairman's Address, "How Gynæcology is Taught." By Ely Van de Warker, Syracuse.

"The System of Visiting Nurses, as organized in Philadelphia." By J. Price, Philadelphia.

"Note on the Occasional Relation of Endometritis Gravidarum to the Pernicious Vomiting of Pregnancy." By W. W. Jaggard, Chicago.

"The Infant Food Problem." By W. B. Atkinson, Philadelphia.

"Apparatus for Facilitating Gynecological Work." Howard A. Kelly, Philadelphia.

"Renal Tenesmus; its successful treatment by Kolp-uretero Cystotomy." By Nathan Bozenan, New York.

Election of officers for the ensuing year.

Second Day. — "Hysteria of the Rectum." By Wm. Goodell, Philadelphia.

"Studies of Endometritis, Adenoma and Carcinoma Corporis Uteri, with Exhibition of Micro-Photographs." By E. W. Cushing, Boston.

A Paper. By E. W. Jenks, Detroit.

"The Abuse of the Pessary in its Application to the Treatment of Uterine Displacements to the Exclusion of Operative Measures." By B. F. Baer, Philadelphia.

"Double Uterus and Vagina." By L. H. Dunning, South Bend, Ind.

"A convenient instrument to aid in posturing for plastic operations about Rectum and Vagina." By W. C. Wile, Danbury, Conn.

Third Day. — "A series of Twenty-five Ovarian Operations without Death." By Joseph Taber Johnson, Washington, D.C.

"Exploratory Laparotomy." By Henry O. Marcy, Boston.

"Abdominal Section in Extra-Uterine Pregnancy." By W. H. Wathen, Louisville, Ky.

Fourth Day. — "The Management of Extra-Uterine Pregnancy." By A. M. Johnson, Danville, Ky.

"A Plea for early Operative Interference in Cases of Obscure Pelvic Pain, and Recurrent Attacks of Pelvic Inflammation in Women." By Rufus B. Hall, Cincinnati.

"Treatment of Acute Peritonitis." By Wm. H. Myers, Fort Wayne, Ind.

"The early Removal of Abdominal Cystic Tumors." By C. R. Reed, Middleport, Ohio.

"The Value of Galvanism as applied by Apostoli in the Treatment of Fibroid Tumors of the Uterus, with Cases." By Franklin H. Martin, Chicago.

"A New Method for Supplying the Electrolytic Current in the Treatment of Uterine Fibroids (with exhibition of apparatus)." By A. B. Carpenter, M.D., Cleveland, Ohio.

"The Galvanic Current in Accessible Parts." By H. L. Reynolds, Chicago.

"Observations on the Technique of Vaginal Hysterectomy, with Report of Cases." By Charles A. L. Reed, Cincinnati.

"Residues of Pelvic Inflammations." By W. W. Porter, Buffalo.

"Separation of the Symphysis Pubis in Labor and its Treatment." By R. B. Bontecon, Troy, N.Y.

"Puerperal Hæmorrhage." By Mary H. Thompson, M.D., Chicago.

Any communication concerning the work of the Section may be sent to the President of the Section, Ely Van de Warker, M.D., Syracuse, N.Y.; or to the Secretary, E. W. Cushing, M.D., Boston, Mass.

THE NEXT MEETING OF THE ASSOCIATION OF AMERICAN MEDICAL EDITORS.

THE following programme has been arranged for the meeting at Cincinnati, Monday evening preceding the meeting of the American Medical Association, May, 1888:—

Meeting called at 8 P.M.

Reading of minutes.

President's address, Dr. William Porter, of St. Louis.

Report of Committee on Organization, Dr. McMurty, chairman.
Danville, Ky.

Election of officers for ensuing year.

Extraordinary business.

Questions for consideration.

1. Is the multiplicity of medical journals an advantage to the profession? To be discussed by Drs. Crothers, Hartford; Sim, Memphis; Wile, Conn.; Love, St. Louis; Culbertson, Cincinnati; Cushing, Boston; Coomes, Louisville; and Gray, Chicago.

2. How far do medical journals distributed by drug-houses and manufacturers interfere with regular medical journalism? To be discussed by Drs. Reynolds, Louisville; Davis, Chicago; Shoemaker, Philadelphia; Bond, St. Louis; Connor, Detroit; Kiernan, Chicago; Thacker, Cincinnati; and Fulton, St. Paul.

Members are requested to limit their remarks to fifteen minutes, and, if possible, to ten. The place of meeting will be posted in all the hotels by the local committee.

Arrangements can be made at this meeting for a "press dinner" for another evening during the week, but it will be impossible to conclude the business of the Association and have the dinner the same evening.

LIST OF ILLUSTRATIONS. — *Concluded*

PAGE

Fig. 198. — Preparation of a ruptured tubal pregnancy, according to *Brüge*.
(Atlas der Frauenkrankheiten)

Fig. 199. — Vertical section through the pelvis, according to *Bandi*

Fig. 200. — Perimetritis with retroflexion of the uterus, according to *Winkel*

Fig. 201. — Perimetritis with retroflexion of the uterus, according to *Winkel*

Fig. 202. — Perimetritis with retroflexion of the uterus, according to *Winkel*

Fig. 203. — *Spencer Wells'* trocar

Fig. 204. — *Milton's* forceps

Fig. 205. — Position of the patient, operator, and assistants for a laparotomy

Fig. 206. — Table for a laparotomy, according to Frau *Horn*

Fig. 207. — Clamp for extra-peritoneal treatment of the stump

Fig. 208. — Carriage and stretcher for the sick, according to Frau *Horn*

Fig. 209. — Abdominal supporter, according to *Beely*. Anterior part

Fig. 210. — Posterior part of the same

With this number of the ANNALS we publish pp. 25-48 of the translation of the valuable work,

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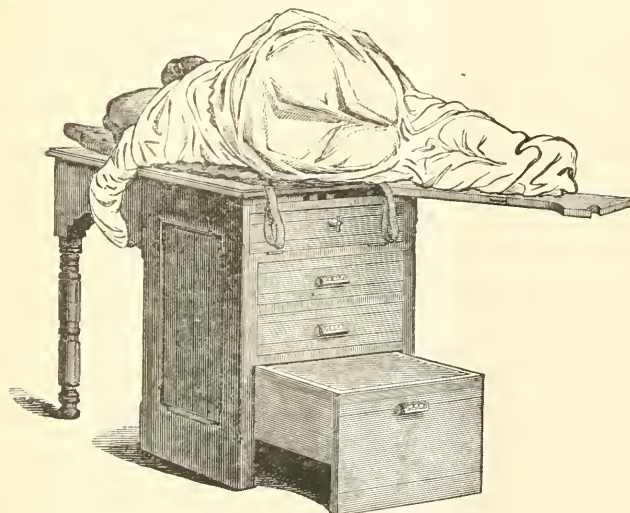
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ANNALS

GYNÆCOLOGY

A MONTHLY REVIEW

GYNÆCOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY.

EDITED BY
E. W. CUSHING, M.D.,
BOSTON.

WITH THE COLLABORATION OF

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MAY, 1888.

CONTENTS.

	PAGE		PAGE
PHILOSOPHY OF THE UTERUS—STENOSES OF THE CERVIX UTERI, <i>A. R. Jackson, M.D.</i>	37	QUININE AS AN OXYBIC, <i>T. Corbin, M.D.</i>	62
THREE HUNDRED AND THIRTY-EIGHT CASES OF ABDOMINAL SECTION, <i>Henry E. Perkins, Jr., M.D.</i>	50	PARAMETRIUM, <i>A. W. Phelps, M.D.</i>	63
		DETROIT GYNÆCOLOGICAL SOCIETY	74
		HOSPITAL REPORTS	88

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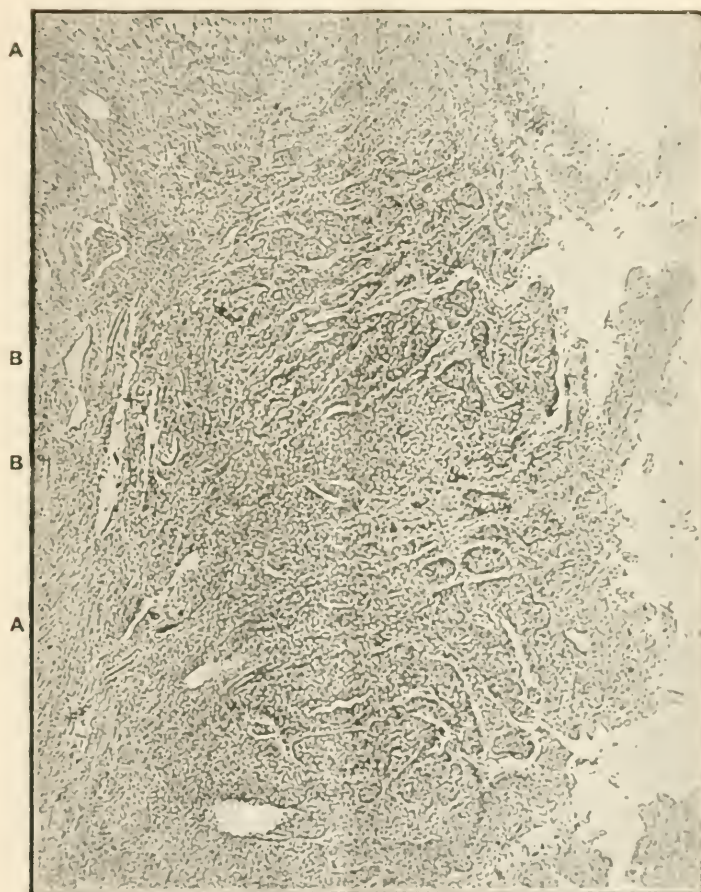


Fig 9.



Fig 10.





Fig. 11.

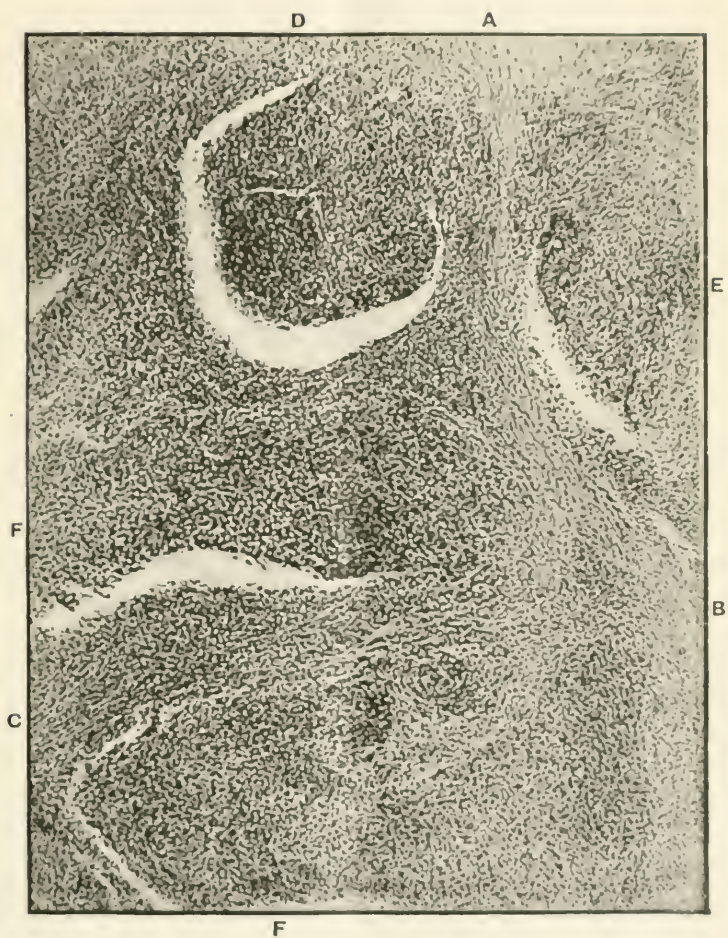


Fig. 12.

CANCEROUS DEGENERATION.

EXPLANATION OF PLATES.

FIG. 9 (50 x) shows a part of the specimen where the cancerous development has supplanted the normal tissues almost entirely. There are no glands visible. To the left, at *A*, is relatively normal uterine tissue, thickly sprinkled with the nuclei of new cells, the "inflammatory reaction" preceding the advent of the cancer. At the level of *B B* are lymph spaces. All the middle of the field is filled with characteristic processes, or pegs, of cancer. These are composed of cells, not very large nor flat, crowded together with no connective tissue between them. The different processes are cut longitudinally, obliquely, or transversely in different places. Their outline is regularly irregular, very different from bundles of uterine muscle, or solid new-formed glands.

At the right the free edge represents the surface of the cancerous ulcer, ragged, necrotic, bare of epithelium, — a condition very different from the so-called erosion (*vide* ANNALS OF GYNÆCOLOGY, Oct., '87), and characteristic of cancer, tuberculosis, syphilis, or similar grave "constitutional" disease.

Between the pegs of cancer the tissues are infarcted with new cells, somewhat smaller than the cancer-cells, in such abundance that the uterine muscular tissue cannot be distinguished.

The next three figures are from a case of cancer of the cervix, which apparently commenced among the glands of the cervical canal, or in the parenchyma of the cervix, spreading downward and outward, but involving the flat epithelium of the portio vaginalis very little. A large cone of cervical tissue was removed, the uterine canal thoroughly cauterized, and the angles of the wound in the cervix brought together with sutures. There has been no recurrence in nine months from the time of operation.

Fig. 10 (50 x) shows at *A' A'* pegs of cancer, forming part of the mass which fills all the left part of the field, sharply defined even to the naked eye. At *B* is a large gland surrounded by irritated tissue. Below this the field shows normal uterine tissue between the cancer at the left and the glands at *C*. The latter are growing rapidly. Microscopic examination shows them to be budding with solid sprouts, and to be surrounded by a tissue filled with small cells, as at *B*. Between these glands and a little cystic dilatation opposite *D* the free surface of the cervix is seen to have its flat epithelium thickened, the papillæ greatly elongated, and the surface, as at *E*, "eroded" in places, or rather undermined by glandular pockets, as described by Ruge and Veit.

Fig. 11 (150 x) shows the gland seen at *B* in the last figure. The infiltration with small cells of the tissues around the gland is plainly visible. Various sprouts or branches of the gland are shown by this section, of which the youngest, to the

right of *A* and *B* and to the left of *C*, appear solid, being cut near the end and across the lining cylindrical epithelium. It is plain that such glandular processes have nothing to do with the solid cancerous pegs shown in the next figure. Where a number of glandular solid sprouts are shown together in a cross section, there is a certain similarity of appearance, but in such cases some of the sprouts will show a lumen, or the arrangement of the outer layer of cells in a ring of elongated epithelium, while all the sprouts will be nearly round or oval, very different from the irregular shapes of the cancer-pegs as seen in Fig. 9.

The lining of this gland is seen to be an unbroken layer of epithelium, and although so near the cancerous mass and evidently soon to be attacked by it, there is no indication of any transition of its epithelia into cancerous cells, such as can be shown in adenomata of the fundus.

Fig. 12 (250 x) shows with a higher power the part of Fig. 10 to the right of *A'*. At *A B C* are partitions of relatively healthy tissue between the cancerous masses, dividing the field into alveoli. *D E F* show aggregations of cells, neither large nor flat, forming cancerous masses lying in alveoli, as seen in Fig. 10. These masses are not penetrated by any septa of connective tissue, have no lumina, and show the cells lying close together. The whole tissue is, however, infiltrated with similar cells not collected into alveoli, and of various sizes, from ordinary wander-cells upward. All these new cells take the color strongly.

The whole specimen corresponds to the description of Ruge and Veit, who have in cancer of the portio vag., "here precisely in the spot where cancroid most commonly occurs, most frequently observed the origin of the latter from connective tissue."

ANNALS OF GYNÆCOLOGY.

VOL. I.

MAY, 1888.

No. 8.

POLYPUS OF THE UTERUS—STENOSIS OF THE CERVIX UTERI.

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Polypus of the Uterus.—This patient is 45 years of age, married, and has had three children. She first menstruated at 15, and has been generally regular. She tells us that she has had no previous sickness of importance, but complains now of frequent micturition, a slight leucorrhœa, and irregular discharges of blood from the genitals at other than the menstrual periods. She states also that she urinates twelve or fourteen times a day. Her history leads us to no accurate diagnostic conclusion. If we wish to ascertain her condition an examination must be made. Indeed, there is a necessity for making a pelvic examination in nearly every case in which married women come for the treatment of almost any condition of ill health. Especially is this true when symptoms indicate clearly the pelvic organs as their source, as in the present case.

On introducing my index-finger I find a normal condition of the vagina; a rough or ragged state of the os uteri, with a smooth roundish mass projecting from the latter about the size of a cherry. It is movable and does not appear to be attached on either side. I have no doubt about the nature of this little body. It is a small polypus, probably of the mucous variety. I now expose it by means of the speculum, and you see it has a rather purplish appearance, and its surface is quite smooth. Sometimes a little polypus, such as the one you observe here, attached as high up as the internal os uteri, may give rise to severe menorrhagia. Indeed, these growths constitute one of the more frequent causes of both menorrhagia and metrorrhagia. There is, of course, but one thing to do, and that is to remove the growth. These membranous polypi are generally attached by a slender base or pedicle, and can be easily removed by an ordinary pair of dressing forceps, or by snipping the pedicle with scissors. I have seized the growth between the blades of the forceps, and now I rotate the handle three or four times—and here it is. The pedicle is so slender that there is only a drop or two of blood following its removal.

By the way, this reminds me, situated as it was, of the fact that some of these growths are called "intermittent polypi," not because they come and go, but rather because they appear and disappear. They are intermittent in the sense of being seen or felt only at certain times, — for example, at the menstrual period, when all the pelvic organs are more or less engorged with blood, they become larger and heavier; they excite a little expulsive effort on the part of the uterus, and the polypus protrudes from the os uteri. The period once over, the growth recedes and goes back out of sight. I remember in one case in which a woman said that with the finger she distinctly had felt something attached to the uterus. I examined her and found nothing. She again felt herself and admitted that it was gone. She came soon again, triumphant, and said, "I told you so." I examined her again, and, sure enough, found a little polypus protruding from the os uteri, as did the one I have just removed. This is what is meant by an intermittent polypus.

Stenosis of the Cervix Uteri. — Patient 33 years of age, and appears before the class with stenosis of the cervix. The term "stenosis" means a partial obliteration or narrowing of the cervical canal. The condition may be either congenital or acquired. Nothing is known of it until the woman begins to menstruate; then she experiences pain, and the pain continues throughout the whole period of the menstrual discharge, differing in this from some other forms of dysmenorrhœa, in which there is pain only for a few hours or during the first day. In cases of organic stenosis the menstrual blood cannot readily make its escape through the canal. The uterus then makes laborious efforts to expel the accumulated fluid from its interior; hence the expulsive pains. This patient has been under treatment for some time, and has had the cervix dilated once with temporary benefit.

There are two methods by which cervical stenosis may be relieved; the first is by incisions of the walls by means of a knife or scissors, and the other by dilatation. If the process of dilatation be chosen, it may be done slowly or rapidly. By the slow method sounds or bougies are used. Commencing first with a small one, the cervix is dilated slightly; then a larger one is introduced, and so on until the limit of the patient's toleration is reached, or until we have introduced a bougie size No. 7 or 8, American scale. At another sitting, one, two, or three days subsequently, we may commence with a bougie of the largest size admissible, and then introduce one after another, as before, until a sufficient degree of dilatation is attained. The sittings may need to cover weeks. Another mode of slow dilatation is by the use of tents, which consists in gradually spreading the walls of the cervix apart by means of dilating substances, as tupelo, laminaria, etc.; or we may resort to mechanical dilatation, which by means of screw force we are enabled to secure in either a

moderate or excessive degree. If the latter, it must be done under local or general anesthesia. In this way the canal may be enlarged so as to admit the index-finger; but there is danger attached to this mode of dilatation. Some expert operators have torn into the peritoneal cavity. Sometimes the uterine walls are extremely friable, so that very little force will cause a sudden tear. Of course this would not occur in a healthy uterine wall. No careful operator will tear through half an inch of dense, fibrous, cervical wall in a healthy condition, but such an accident may occur when the wall is diseased. Sometimes we can pass a flexible bougie where a stiff metallic instrument could not be passed, owing to flexures or other irregularities of the cervix, without the exertion of dangerous force. I will pass a No. 7 bougie, and next a No. 8. Continuing in this gradual manner I have now introduced a No. 16. It is not ordinarily necessary to use a speculum for the purpose of introducing a sound into the uterus, but here, with flexible instruments, it has been a convenience and a time-saver. Now, before I withdraw the speculum, some of you who are near enough can see the condition of the os. There is no redness or inflammatory condition about it, which is greatly in favor of the patient. At the last menstrual period I am informed she had no pain, and the chances are she will escape it in all her subsequent menstrual periods if this amount of dilatation be kept up. To do so may require a repetition of this process every three or four months.

THREE HUNDRED AND THIRTY-EIGHT CASES OF ABDOMINAL SECTION, IN THE PRACTICE OF DR. WALTER BURNHAM, LOWELL, MASS., WITH A BRIEF REPORT OF HIS LIFE AND METHODS.

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DR. WALTER BURNHAM was born in Brookfield, Vt., Jan. 12, 1808, the son and grandson of physicians, and was graduated from the Burlington, Vt., Medical College in 1829, practising in the northern districts of Vermont and New Hampshire until his removal to Lowell, Mass., in 1846. From 1851 to 1860 he was Professor of Surgery and Obstetrics in the Worcester Medical School, incorporated under the laws of the State. For several years he was a member of the Massachusetts General Court, being instrumental as a member in 1855 in the introduction and passage of the Anatomy Act governing the disposal of pauper bodies for anatomical purposes. He became a member of the Massachusetts Medical Society in 1861, and was surgeon of the 6th Massachusetts Infantry in

two of the campaigns of the late war, receiving permanent injuries in the service. He died at Lowell, Jan. 16, 1883, his death being the ultimate result of a railroad injury received at Elmira, N.Y., in 1879, which destroyed his left arm.

His manuscripts and papers were left to the writer, his descendant, and assistant in some of his later work, that his labors might be made public. The preparation of this record was begun in the lifetime of Dr. Burnham, much of the material having been gone over with him. To its satisfactory completion there have been unavoidable interruptions. Moreover, inasmuch as the value of such a record as is now offered is to be estimated by its accuracy, much time has been spent in perfecting the histories of the cases. These are based upon notes, manuscript and case-book reports, letters from patients and their attending physicians, and upon replies to my interrogatories addressed to physicians in all parts of the country who had assisted at the operations. From the many demands of his very busy professional life, Dr. Burnham, in some of the more ordinary cases, failed to take more time than to note the briefest details. Even reports of some of the more noteworthy cases were preserved only on the pages of his diaries or pocket visiting lists. A few have been rescued by following hints given in letters which have been saved.

The paper is now submitted to the profession as an authentic statement of the previously unpublished results of Abdominal Section at the hands of an American surgeon, whose work should neither be forgotten nor overlooked.

The operations may be classed in five groups:—

1. Completed Ovariectomies.
2. Hysterectomies.
3. Partial Removals of Ovarian and Uterine Tumors.
4. Exploratory Operations.
5. Operations for Omental Tumors.

I. COMPLETED OVARIOTOMIES.

This operator's early experiences with ovariectomy were peculiar. As a lad, in 1823, he had heard Dr. Nathan Smith, the second American ovariectomist, describe his operation to Dr. Burnham, Sen., at whose house he was a guest. Later on, in the early days of his practice in Vermont, he had carefully studied the *post-mortem* characteristics of these tumors, and had once, in 1839, made all plans to perform the operation upon a patient who died suddenly the night before the appointed day.

The first operation upon the living subject was in 1851, and was suc-

cessful. The second case proving fatal, there began a storm of abuse which lasted for several years. I have before me now a letter of 1854, sent him by a friend after another fatal operation — exploratory — which contains an extract from a leading medical journal of the day in which the operation as performed by Dr. Burnham is styled “Barbarity under the name of Science.” He was twice threatened with prosecution for manslaughter, the recovery of the patients forestalling the designs of the prosecutors, and was once arrested for operating in Canada, though immediately released. In 1855 a leading surgeon of New York said to him that he regretted his success, for other men would be tempted to make an unjustifiable operation. This was the same professor of surgery who taught his classes at that time that not above 1% of such cases could prove successful.

It does not seem too much to assert that Dr. Burnham’s great success aided to give the operation its proper place in surgery, especially among the practitioners of the North. By referring to the tables of cases it will be seen how far this reputation for success extended. Operations were made by him in all of the New England States, in Canada, in every part of New York, in Pennsylvania, New Jersey, Delaware, Michigan, Illinois, Wisconsin, and Iowa; and cases were declined, calling him into Indiana and twice to California.

It will hardly be denied that this reputation was justly earned. But I trust that the record of these cases is not to be compared with that of the operators of to-day. The better results attained by Homans or Keith or Tait are those of operations for the most part made in private hospitals, with every resource of surgical science and good nursing to sustain the flickering life. The operations of Burnham, like those of Kimball and the Atlees, were in almost every instance performed at the home of the patient, with the after-attention of ordinary practitioners and every-day nurses. It is to be said to the credit of American physicians that seldom was the confidence put in them misplaced. It cannot be expected, however, that the skill of the practised surgeon or the *armamentarium* to be drawn upon to meet the exigencies for grave cases shall be met with among them; far less is it possible for the nursing and care now deemed so essential for success to be found in the ordinary home. Therefore, in examining the detailed histories of many of the cases whose deaths are ascribed to exhaustion and peritonitis, I am forced to believe that the fatal results might have been averted had the cases been subject to the more modern methods of after-treatment at the hands of the surgeon and the care of trained nurses.

Another fact is to be remembered. These were not selected cases.

In all but absolutely hopeless conditions, with the expressed wish of the patient for the operation, no thought as to his *per cent.* of recoveries deterred Dr. Burnham from the attempt at removal. Many cases were thus saved, but the percentage of deaths was largely increased. In such cases as Nos. 229 and 237, where the prostration was extreme, as No. 263, where there was general anasarca from chronic nephritis, as No. 273, where a pyæmic condition was already present, the operator might better have hesitated.

He began his abdominal surgery at a time when the correct diagnosis of abdominal tumors was but little defined, and worked out its distinctions for himself. Besides my own fairly large experience with him, I have the unsought evidence of others to testify to the accuracy of this self-taught diagnosis. He was a bold operator, fertile in resources to meet unexpected complications, and possessed that requirement for good surgery, very exact anatomical knowledge.

To those who know the now accepted methods of operation, Dr. Burnham's development of details may be of interest.

Anæsthetics. — Chloroform was preferred, owing to its less disagreeable after-effects; yet, although he never used a mixture, in his later years he began with chloroform, finishing with ether.

Antiseptics. — In 1853 diluted alcohol was used on the dressings. In a few cases, dating from 1855, diluted creosote was tried. An assistant of about this time writes me that Dr. Burnham then began the use of the liq. sod. chlorinat., which was continued for a few years. Permanganate of potash was used during the years of the war. In 1865 or 1866 he obtained from Paris a bottle of the impure carbolic acid, and never abandoned this antiseptic. His great aim was cleanliness, which he believed the merit of Listerism. He never used the spray, nor did he have confidence in the bichloride of mercury solution, just coming into vogue in his later years, as he dreaded its poisonous effects.

Incision. — The long cut was at first thought necessary, it often being a full twelve inches. After 1857 the primary incision was seldom over three inches; and I have seen him remove an unadherent ovarian cystoma of 18 lbs. weight through an opening but little more than two inches in length.

Evacuation of the Cyst. — Up to the time that he procured the Wells trocar, when first introduced, the fluid was drawn off with a No. 10 or a curved rectal trocar. Afterwards, he invariably used the Wells instrument, with grapple and rubber-tube attachment.

Treatment of Adhesions. — Ligation was avoided, if possible, small blood-vessels being secured by torsion. If ligatures were used, they were

of silk, sometimes cut short, but generally brought through the incision. The favorite plan, if the adhesions were numerous, was to incise the cyst, and, reaching through the incision, grasp the posterior inner wall of the sac and attempt to invert it. I have seen firm adhesions, preventing the passage of the hand, behind the tumor readily yield to this manœuvre. Although generally present among his instruments, I never knew the cautery to be used to divide adhesions.

Treatment of the Pedicle. — This was always subdivided according to its size, each subdivision ligated and a final ligature thrown around the whole, the square knot being used. In the only case where this slipped, the knot was tied by an unaccustomed hand, fatal hæmorrhage being the result. In the first cases whipcord was used. In one, silver wire was tried and the intraperitoneal method, the case dying. At another period the stump was often fastened to the incision by silver wire, with good results. The clamp was used in a few cases, but soon abandoned. In the majority of cases the ligation was done, as at first described, with specially prepared silk, the pedicle dropped into the cavity, and the ligatures brought out through the incision. In the last few operations the ligatures were cut short and the pedicle left free. Occasionally with a very vascular pedicle the *écraseur* was used to divide it; and here, still more rarely, was the cautery used. Catgut was never employed.

A curious feature of this part of the work was the care taken not to include the Fallopian tube in any of the ligatures. It was always carefully isolated, for, inasmuch as in a few cases, where this care had not been taken, shock was a very powerful element afterwards met with, Dr. Burnham considered that in some way this ligation tended to the fatal result.

Sutures and Dressings. — Silver wire was used in a few cases, silk, however, being the usual material, deep and superficial stitches being taken.

The same general plan of dressings was maintained from the first, consisting of broad adhesive strips, muslin compresses wet with the lotion used, sheet-cotton, more compresses, and a bandage. Except in the few cases where stimulation was also needed, the invariable after-treatment was sulphate of morphia, gr. $\frac{1}{2}$ — $\frac{1}{4}$ *pro re nat.*

Consideration of Cases of Completed Ovariectomies. — As will be seen by looking at Table No. 1, this record includes 281 operations. Of this number 51 are known to have been fatal, 227 to have been successful, and the results in three cases are uncertain, though thought to have been successful. With a basis of 230 recoveries the percentage of success is 81.8 +. With a basis of 227 recoveries in 278 operations the percentage

becomes 81.6 +. Even allowing 54 fatalities — which is fallacious — out of the 281 cases the percentage is 80.8 +.

They cover a period of thirty years, there being 62 cases in the first decade, 115 in the second decade, and 104 cases in the last. In the first one hundred cases the death-rate was 16 per cent., in the second hundred it was 19 per cent., in the last 81 cases it was 19. + per cent. There seems to be a satisfactory explanation of the increase of mortality in the second hundred of cases, it being certainly due in part to the acceptance of chances, which, in his earlier years, while the operator was, as it were, feeling his way, would have been declined. It seems the only way to account for the great fatality of some years. For instance, in 1869, in nineteen cases, the mortality was 42 per cent., while in 1868, in twenty-six operations, it was but 7.6 per cent. But in 1869 there were four cases, Nos. 149, 150, 154, 158, in which surgical interference was a procedure of last resort under the most unfavorable prognosis.

This explanation must hold good, too, in considering the mortality of the last eighty cases, especially as regards Nos. 229, 237, 263, 273, already referred to. Moreover, during his last few years, by reason of his failing strength and health, Dr. Burnham frequently declined all but the gravest cases, in which he felt that his experience might assist to a favorable result.

Relation of Age to Result. — The ages are recorded in 180 instances. Ten were over 60 years; ninety-four were over 40 years. Of those over 60 years, 40 per cent. died; of those between 50 and 60 years, 27.7 + per cent. died.¹ Ninety were under 40 years, with a mortality of 20 per cent.

The oldest person operated upon was 65 years, the youngest 17 years.

*Character of Cyst as affecting the Result.*² — This is reported in 249 cases, comprising 262 cysts. Thirteen of the cases were of both ovaries; in seven of these both cysts were multilocular; in one, both were unilocular; in three, one was unilocular and one multilocular; in one, one was multilocular and one dermoid; in one case, one tumor was

¹ This being opposed to Wells' figures in his first 500 cases. He says that of those between 60-65 years, 16.6 + per cent. were fatal, while 31 per cent. died of those between 50-60 years. — *Dis. of Ovaries*, Am. ed., 1873, p. 321.

² I regret that I am not able to make the distinction in these cases between ovarian and parovarian cystoma. For many years after Dr. Burnham began his work no such classification was attempted. Therefore, while in his later cases the distinction was made, in the earlier cases he made none. After carefully studying his manuscripts with this object in view, I gave up the attempt. The cases so separated could bear no proper proportion to the true number, and would be worthless for reference, as the selections might be arbitrary. Unsatisfactory as they are, it seems better to preserve the old terms made use of by the operator.

multilocular, the other a fibroma. Of the thirteen cases, five died, giving a mortality of 38.45 per cent.

Including a fibroma, in one of the cases of double tumor, there were five cases of undoubted fibroma of the ovary with no question of uterine origin. Of these, two, including the case of the bilateral growth, were successful, making the mortality 60 per cent.

There were five cases of undoubted fibro-cysts developed from the ovary, of which two died, or 40 per cent.

Including the case in which there was disease of both sides, one being a dermoid growth, there were seven cases of dermoid cysts, of which three were fatal, or 42.8 per cent.

Of the cases of unilateral cystoma, excluding fibroma, dermoid, and fibro-cystic growths, 162 were multilocular, with 20 deaths, or 12.31 + per cent.; 59 were unilocular, with 10 deaths, or 16.9 + per cent.

The weight is given in 72 cases: 26 weighed 40 lbs. or over, 14 weighed 50 lbs. or over, 10 weighed 60 lbs. or over, 1 weighed 70 lbs. The death-rate of these 26 cases is 34.6 + per cent., while the death-rate of those with the weight given as less than 40 lbs. is but 17.7 + per cent. Inasmuch as in the majority of cases the weight was not such as to attract attention, the relation of size to prognosis seems marked.

The known age of the tumor seems to have had but little influence on the result, except in cases where inflammatory attacks were frequent. One cyst had been present for thirty, two for over fifteen, and several for more than eight years. The average length of time from the discovery of the tumor to its removal was about two years.

Extensive degeneration of the cyst, with discoloration and thinning of its walls and a shreddy condition of the inner membrane, as noticed in many of the fatal cases, seemed in no way dependent upon the age of the neoplasm.

Causes of Death.—This was indicated in 41 out of the 51 fatal cases. In twelve it was due to exhaustion, in nine to peritonitis, in nine to shock, in five to septiciæmia, in two each to diphtheria and catharsis, and in one each to chronic diarrhœa and hæmophilia.

The deaths from exhaustion were at various periods up to the sixth day. In several of the cases the fatal result was within a few hours preceded by a large outpouring of serous fluid from the peritoneal cavity through the incision. In one case pulmonary tuberculosis, and in another chronic diarrhœa, were contributory causes.

The deaths from peritonitis were on days from the third to the ninth, and were in cases of extensive adhesions. The deaths from septiciæmia were all in the first week, except that of No. 177, in the fifth

week, caused by a subperitoneal abscess developing around the site of the pedicle. Shock was usually fatal within the first thirty hours. The cases from diphtheria died on the seventh and sixteenth days, respectively. As will be seen by referring to the table, in the latter case, No. 68, all symptoms caused by the operation had subsided, and the incision remained closed. The death is hardly traceable to the ovariectomy, yet its performance and the consequent prostration undoubtedly increased the susceptibility to contagion, hence the case is included among the fatalities. In the first case, No. 260, the effect was different, the partly healed incision having broken down and its sides become covered with membrane. In both cases there was undoubted epidemic influence, and certainly in one case the contagion was carried by an attending physician.

The deaths from catharsis were occasioned by grossly ignorant attendants, death being by exhaustion.

The death from chronic diarrhœa was on the fifth day, the operation seemingly weakening the patient and intensifying the disease.

The case of hæmophilia was aware of her predisposition, but intentionally kept it from the operator, preferring to take her chances. The fatal hæmorrhage was from the site of the adhesions, and took place after the removal of the sac. A condition present in many of the fatal cases, especially found noted where the deaths were from exhaustion and peritonitis, was that of carcinomatous or tuberculous deposits in the omentum and peritoneum; this latter in many cases being reported to be studded with small tubercles and exceedingly congested. It will also be noticed that pulmonary tuberculosis was a further complication in several cases, and that in one case morbus coxarius was present. Malignant trouble with the liver was several times observed. In case No. 69, also, in the walls of a multilocular cyst was found a hard mass of about the size of an orange, which upon careful examination was declared to be carcinomatous. The patient died in the following year from extended carcinoma of the abdominal organs.

Ventral hernia was a permanent result in four cases. In two others a hernia appeared between the ligatures, but was reduced before the healing of the wound.

II. HYSTERECTOMIES.

Owing to his neglect to publish his ovariectomies, Dr. Burnham's fame at present rests upon his hysterectomies; it is from them that he is known to medical writers, and by all authorities, at home and abroad, he is now acknowledged to have been the first surgeon to successfully remove by laparotomy the uterus and its appendages for

fibroid disease. That the operation was begun under an uncertain diagnosis does not detract from the skill or success with which the great difficulties of the combined ovarian and uterine growths were met and overcome. It was performed June 26, 1853, the patient being alive in 1884.

Altogether the operation was made fifteen times, as was stated in an article read by his then associate before the American Medical Association in 1878, and published in their Transactions for that year, and as will be seen in Table No. II.

His first success led him to think the operation destined to as good success at his hands as that of ovariectomy.

Beyond the natural excess of fatality over this less severe operation, there are two reasons why his success was not greater. He never operated until the patient was in a low general condition, and in almost every case the operation was performed at the patient's house, with consequent lack of assurances of good care. This is well shown in the case of No. 288, who steadily improved until the ninth day, with healing of the incision, and was then drenched from a leaking roof during a severe storm, dying from a resulting peritonitis on the thirteenth day. Case No. 291 died, as did at least two of the ovariectomy cases, from cathartics given by the attendant.

Recording these cases as fatalities, the percentage of success is 20. Excluding No. 288, whose recovery was assured but for her untoward exposure, the result would be a fraction less than 27%.

Under other conditions of attention, protection, and a proper selection of cases, the result would have been different: but no series of operations made from necessity rather than choice can be used to give high percentages of success.

III. PARTIAL REMOVAL OF OVARIAN AND UTERINE TUMORS.

In all the partial removals of ovarian growths, or incomplete ovariectomies, the method of procedure was essentially the same. Entire removal having been found to be impracticable, the cyst or cysts were thoroughly emptied, as much of the sac wall as possible was excised and the remainder brought closely into the abdominal incision, to which it was sutured; the object being to diminish the secreting surfaces, and, if advisable, to make permanent drainage.

These cases comprise the first six in Table No. III., five of which recovered and lived for a period of from a few weeks to two years. The sixth case, No. 302, was remarkable. It was but of a few years' growth;

it had never been tapped, there had been frequent attacks of peritonitis, the patient had several times declined operation, at last demanding it when almost *in articulo mortis*; and, finally, the enormous bulk of the tumor renders it worthy of note. The larger part of the cyst wall, which was more than $\frac{3}{4}$ in. in thickness, was left intact, yet the fluid and portion removed weighed 130 lbs. The patient died as the sutures were being inserted.

The partial removal of uterine tumors includes the last seven cases of Table No. III. Four of these were cases of more or less complete removal of fibro-cysts from near the fundus uteri, with but one recovery.

Three were cases of removal of sub-peritoneal fibromata, with one recovery.

In the five fatal cases, shock was the cause of death in two, exhaustion in two, hæmorrhage in one.

IV. EXPLORATORY OPERATIONS.

It is difficult to say just where Dr. Burnham's explorations ended and where his operations for partial removal began, for wherever he found a tumor he was never content to think it could not be removed until he had made the attempt. This will serve to account for the great fatality of the cases recorded in Table No. IV. These comprise:—

(a) Ten cases where an ovarian cystoma was more or less complicated with adhesions or other tumors. In all but No. 315 the operation was essentially the same. Removal being impossible, the cyst or cysts were emptied with a long trocar and the incision closed. In No. 315 the operation was undertaken after the rupture of a cyst, and under the pressure of a resultant peritonitis, to endeavor to remove the morbid material, but without success. Case No. 319 was very peculiar. A uterine subperitoneal fibroma had become adherent to an ovarian dermoid, and having absorbed the adherent wall of the cyst, projected into its cavity, being coated with the long hair present in the cyst. But four of these operations were successful. It further strengthens the assertion before made of the operator's willingness to undertake almost hopeless cases. Four of the six fatal cases died from exhaustion, which was but little increased by the operation.

(b) Eleven cases where uterine fibromata were more or less complicated.

Two of these were successful operations to relieve the true pelvis from the impaction of a fibroid, which was lifted to the broader upper basin, with complete relief of all pain. The remaining nine were subperitoneal

fibroma, or fibro-cysts, which were more or less disturbed. The fibro-cysts were tapped, one with complete success; another proving fatal from hæmorrhage into it. Of these nine cases six proved fatal. In one case carcinoma uteri was also present.

(c) Six cases in this table are of mistaken diagnosis. In many of the cases already noted, especially in the earlier stages of Dr. Burnham's career, there must have been a certain amount of doubt as to the true diagnosis; but in these six cases the diagnosis was undoubtedly wrong, — all being mistaken for obscure ovarian disease. One was the case of an enormous subperitoneal abscess, but in five there was present peculiar ascites accompanying malignant disease of some part of the cavity. In two cases this was recorded as albuminous. In another, a uterine fibroma was also present. One case only was successful.

V. OMENTAL TUMORS.

In two cases, as recorded in Table No. V., the abdomen was opened in large, fleshy women, to relieve from severe pain of pressure from fatty enlargements of the omentum, and in each case with success.

Résumé. — These cases, comprising a total of 338, with a mortality of 86, have a percentage of success of 74.5+. Among them are some of the most formidable operations of surgery, many of them made at a time when their performance was more than an act of skill and knowledge: it required the physical as well as the moral courage of his convictions to breathe the atmosphere of antagonism which at one time surrounded Dr. Burnham. They were made by a general practitioner, whose skill in other branches of his profession was beyond the average, but whose reputation must rest upon his record of abdominal sections.

Beginning this work when the operation of laparotomy was in its infancy, he lived to see the grand results of Homans, Keith, Wells, and Tait in ovariectomy, and of Péan and the German operators in hysterectomy. With like surroundings, and with equal opportunities for watchful care and personal supervision of his cases, his rank, judged by his success under disadvantages, would not have fallen far short of that of these modern operators. Yet, while it does not equal theirs, it can justly be said that, working in this special field simply as a branch of his general practice, performing his operations many times in hovels, frequently in log huts on the borders of civilization, hundreds of miles from his home, his success will well bear comparison with that of his contemporaries among the earlier American ovariectomists, and his work and industry be as well worthy of admiration and remembrance.

TABLE No. I. — COMPLETED OVARIOTOMIES.

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
1	Miss P.	26	Bramford, Ct.	Aug., 1851.	Recovered.	Growth, four years; intestinal obstruction; impaction of tumor in true pelvis; dermoid cyst, left side, with hair, teeth, and bones; weight, fifteen pounds.
2	Miss T.	20	Meriden, Ct.	Feb., 1852.	Died.	Great poverty and debility. Extensive visceral and peritoneal adhesions. Unilocular cyst, right side; weight, fifty-four pounds. Death from peritonitis on fourth day. Parovarian.
3	Miss G.	30	Wilton, N.H.	Jan., 1853.	Recovered.	Slight adhesions; dermoid cyst, left side; weight, twenty pounds.
4	Mrs. L.	36	Dover, N.H.	Aug., 1853.	Recovered.	Extensive visceral adhesions; multilocular cyst, right side; weight, forty pounds.
5	Mrs. C.	44	Lowell, Mass.	April, 1854.	Recovered.	Growth, one year; within four months attack puerperal peritonitis; extensive peritoneal adhesions, requiring ligatures. Suppurative peritonitis followed with expulsion of ligated adhesions on the tenth day. Multilocular cyst, right side. Alcohol-creosote used.
6	Mrs. H.*	42	Hampstead, N.H.	April, 1854.	Recovered.	Double operation, both sides multilocular, the pedicles being twisted around each other; weight, fourteen pounds. On fifth day vomiting caused rupture of sutures and protrusion of intestines into the bed. Slow recovery.
7	Mrs. T.	40	Gloucester, Mass.	June, 1854.	Recovered.	Unilocular, left side.
8	Mrs. W.	32	E. Haven, Ct.	June, 1854.	Recovered.	Multilocular, right side; weight, twenty-four pounds.
9	Mrs. S.	60	Fall River, Mass.	Sept., 1854.	Died.	Chronic diarrhœa present. Simple operation. Multilocular cyst, right side; weight, twelve pounds. On fifth day uncontrollable diarrhœa came on, and proved fatal.
10	Miss F.	33	Harlem, N.Y.	Jan., 1855.	Recovered.	Twice tapped; last time followed by peritonitis. Extensive adhesions. Multilocular, right side. At base of pedicle was found an old collapsed sac, thought to be that previously tapped.

11	Mrs. R.	50	New York City.	Mar., 1855.	Recovered.	Twice tapped; adhesions around old puncture; multilocular.
12	Mrs. G.	50	Rochester, N.Y.	June, 1855.	Recovered.	Extreme emaciation, with most rapid recovery after removal. Multilocular cyst; weight, thirty pounds.
13	Mrs. K.	41	New York City.	Sept., 1855.	Recovered.	Simple case; no adhesions; unilocular; weight, twenty-five pounds.
14	Mrs. Y.	40	Charlestown, Mass.	Jan., 1856.	Recovered.	Growth, one year; chronic tuberculous present; multilocular. Pelvic fastened in wound by clamp.
15	Mrs. L.	44	Newmarket, N.H.	Mar., 1856.	Died.	Uncomplicated case; multilocular; weight, twenty-one pounds. Cause of death not reported.
16	Mrs. M.	..	Bridgewater, Mass.	Sept., 1856.	Recovered.	No complications. Very small, multilocular.
17	Miss S.	34	Dover, N.H.	Oct., 1856.	Recovered.	Growth, three years; great debility; multilocular; weight, twenty-two pounds.
18	Mrs. H.	32	New Hampton, N.H.	Oct., 1856.	Recovered.	Growth, two and one-half years. Uncertain diagnosis. Very extensive adhesions. Double operation; both tumors multilocular. Uterine tumor left undisturbed. Adhesions so vascular as to demand ligation of each one.
19	Mrs. H.	40	Woonsocket, R.I.	Nov., 1856.	Recovered.	Uncomplicated; multilocular.
20	Mrs. B.	38	Brunswick, N.J.	Dec., 1856.	Recovered.	Growth, three years; firm vesical adhesions; inner wall of sac degenerated; multilocular, left side.
21	Miss G.	30	Danville, Canada E.	Feb., 1857.	Recovered.	Growth, four years; repeatedly tapped. Iodine once injected. Extensive adhesions requiring ligatures. Multilocular, left side, weight, thirty-four pounds.
22	Mrs. S.	58	Bristol, R.I.	Mar., 1857.	Recovered.	Growth, two and one-quarter years. Very vascular and extensive adhesions; multilocular, right side; weight, thirty-eight lbs.
23	Mrs. L.	40	Harlem, Ct.	May, 1857.	Recovered.	Growth, one year. Simple case; no adhesions; multilocular.
24	Mrs. McG.	50	Lowell, Mass.	May, 1857.	Died.	Lived in poverty. Good case; multilocular. Death, fifth day. Peritonitis.

TABLE No. I. — COMPLETED OVARIOTOMIES. — *Continued.*

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
25	Mrs. F.	38	Whitefield, Me.	June, 1857.	Recovered.	Growth, three years. Slight adhesions; double operation; multilocular tumor, right side; unilocular, left side. Recovery complicated by presence of "gonorrhœa."
26	Mrs. D.	39	Chelsea, Mass.	July, 1857.	Died.	Simple case; slight adhesions; multilocular. Death, fourth day, cause unknown.
27	Mrs. A.	38	New Haven, Conn.	July, 1857.	Recovered.	Growth, two years. Double operation; both tumors unilocular. Ovaries cystic.
28	Miss R.	22	Stonham, Mass.	Aug., 1857.	Recovered.	Growth, one year. No complications.
29	Mrs. F.	41	Smithfield, R.I.	Oct., 1857.	Recovered.	Growth, two years; slight adhesion. Pedicle very broad and vascular, requiring six ligatures. Multilocular tumor, left side; weight, thirty-four pounds.
30	Mrs. S.	38	New Jersey.	Oct., 1857.	Recovered.	Growth, one year; no adhesions. Multilocular.
31	Miss T.	35	New York City.	Nov., 1857.	Died.	Growth, two years; great debility; no adhesions. Death from exhaustion, second day.
32	Miss M.	28	Lowell, Mass.	Nov., 1857.	Recovered.	Vascular adhesions to intestines; large amount ascites. Multilocular, left side.
33	Mrs. H.	49	Roxbury, Mass.	Nov., 1857.	Died.	Growth, eight years. Great emaciation and chronic diarrhœa; adhesions to intestines. Multilocular. Death, shock, second day.
34	Mrs. T.	36	Lawrence, Mass.	Dec., 1857.	Recovered.	Growth, two and one-half years. Slight adhesion. Inner wall of sac disintegrated. Multilocular. Operation followed by peritonitis, lasting till sixteenth day. Hernia at incision resulted.
35	Miss W.	28	Bristol, R.I.	Jan., 1858.	Recovered.	Extensive adhesions. Multilocular; weight, twenty pounds.

36	Mrs. B.	49	Worcester, Mass.	Feb., 1858.	Recovered.	Simple case.
37	Miss C.	18	Manchester, N. H.	Mar., 1858.	Died.	Growth, one year. Pulmonary tuberculosis and great debility. Multilocular. Death, fourth day, from exhaustion.
38	Miss C.	31	Connecticut.	Mar., 1858.	Recovered.	Growth, three years. Twice tapped. Few adhesions. Multilocular tumor. Recovery delayed by slight peritonitis.
39	Mrs. R.	—	Jersey City, N. J.	Mar., 1858.	Recovered.	No complication. Unilocular.
40	Mrs. H.	41	Dorchester, Mass.	April, 1858.	Died.	Growth, three years. Slight adhesion. Sac gangrenous. Death from septicaemia, fourth day.
41	Mrs. K.	30	Connecticut.	April, 1858.	Recovered.	Simple case. Unilocular, left side. Recovery delayed by fever. Caused by subperitoneal abscess, which ruptured into vagina on eighth day.
42	Mrs. K.	30	Avon, Me.	Oct., 1858.	Recovered.	Growth, one year. No complications. Unilocular.
43	Mrs. J.	42	St. Lawrence Co., N. Y.	Oct., 1858.	Recovered.	Growth, two years. Extensive adhesion. Multilocular, left side. From too early exertion, hernia appeared at incision.
44	Mrs. N.	59	Middleton, Conn.	Nov., 1858.	Recovered.	Growth, six years. No adhesion. Multilocular.
45	Mrs. S.	—	Rhode Island.	Dec., 1858.	Recovered.	Extensive visceral adhesion. Multilocular tumor. Operation followed by inflammatory action.
46	Miss H.	38	Rockville, Conn.	Jan., 1859.	Recovered.	Growth, one and one-half years. No adhesion. Unilocular.
47	Miss C.	35	Lowell, Mass.	Jan., 1859.	Recovered.	Growth, one year. Unilocular.
48	Mrs. E.	40	Fall River, Mass.	Feb., 1859.	Recovered.	Unilocular.
49	Mrs. R.	35	Granbury, N. J.	Mar., 1859.	Recovered.	No adhesions. Multilocular, left side.
50	Miss A.	—	Vermont.	Mar., 1859.	Recovered.	Growth, three years. Multilocular.
51	Mrs. L.	20	S. Deerfield, N. H.	June, 1859.	Recovered.	Growth, three years. Multilocular, left side; weight, twenty-four pounds.
52	Mrs. H.	30	Milbury, Mass.	Nov., 1859.	Recovered.	Great debility. Clamp used and removed the eighth day. Multilocular, right side.

TABLE No. I. — COMPLETED OVARIOTOMIES. — *Continued.*

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
53	Mrs. S.	44	Mansfield, Mass.	Nov., 1859.	Recovered.	Unilocular, left side.
54	Mrs. H.	38	Maine.	Jan., 1860.	Recovered.	Multilocular.
55	Mrs. G.	..	E. Douglass, Mass.	Feb., 1860.	Recovered.	Unilocular.
56	Mrs. H.	36	Philadelphia, Pa.	Mar., 1860.	Recovered.	
57	Mrs. H.	45	Newburyport, Mass.	April, 1860.	Died.	Multilocular. Cause of death unknown.
58	Mrs. G.	38	Near Lyndon, N.H.	July, 1860.	Recovered.	Multilocular; weight, forty-two pounds.
59	Mrs. R.	..	Port Kent, (?) N.Y.	Aug., 1860.	Recovered.	Multilocular.
60	Mrs. R.	..	New Jersey.	Sept., 1860.	Recovered.	Slight adhesions. Multilocular.
61	Mrs. D.	44	Reading, Mass.	Sept., 1860.	Recovered.	Unilocular.
62	Mrs. D.	41	Boston, Mass.	Nov., 1860.	Died.	Cause of death, catarsis.
63	Mrs. L.	..	Augusta, Me.	Jan., 1861.	Recovered.	Unilocular.
64	Mrs. B.	28	Colechester, Conn.	Dec., 1861.	Recovered.	Unilocular; weight, thirty-six pounds.
65	Mrs. W.	26	Providence, R.I.	Mar., 1862.	Recovered.	Growth, four years. Multilocular. Recovery delayed by subperitoneal abscess which broke into vagina, second week.
66	Mrs. T.	58	Newport, Vt.	Mar., 1862.	Recovered.	Small tumor, and enormous umbilical hernia; unilocular.
67	Mrs. C.	..	Hudson, N.H.	June, 1863.	Recovered.	Unilocular.

68	Mrs. A.	40	Manchester, N. H.	June, 1803.	Died. (?)	Simple case. Progressed well, with healing of incision till tenth day, when an attack of diphtheria came on, proving fatal, sixteenth day. Unilocular.
69	Mrs. C.	38	Providence, R. I.	Sept., 1803.	Recovered.	Multilocular tumor. Between walls of cyst was a hard mass of the size of an orange, which was considered malignant. She died in one year of cancer of omentum and mesenteric glands.
70	Mrs. L.	44	Pelham, N. H.	Oct., 1803.	Recovered.	Unilocular; weight, thirty-four pounds.
71	Mrs. B.	32	Andover, Conn.	Nov., 1803.	Recovered.	Multilocular.
72	Mrs. S.	46	Rhode Island.	Jan., 1804.	Recovered.	Multilocular.
73	Mrs. S.	47	Philadelphia, Pa.	June, 1804.	Recovered.	Multilocular.
74	Mrs. N.	35	Wilmington, Del.	July, 1804.	Not known.	
75	Mrs. M.	41	Newport, Vt.	Aug., 1804.	Recovered.	Unilocular.
76	Mrs. K.	44	Near Celechester, Ct.	Sept., 1804.	Recovered.	
77	Mrs. J.	..	Moozus, Conn.	Sept., 1804.	Died.	A subject of hamophilia, which she kept from the operator; death from passive hemorrhage and exhaustion. Multilocular.
78	Mrs. C.	46	Waterford, Vt.	Nov., 1804.	Died.	Multilocular. Cause of death unknown.
79	Miss B.	36	Charlestown, Mass.	Jan., 1805.	Died.	Multilocular. Death from exhaustion.
80	Miss F.	43	New York City.	Feb., 1805.	Recovered.	Multilocular, right side.
81	Mrs. F.	43	Springfield, Vt.	April, 1805.	Recovered.	Multilocular.
82	Mrs. B.	36	Towell, Mass.	April, 1805.	Recovered.	Multilocular; weight, thirty-one pounds.
83	Mr. L.	46	Towell, Mass.	May, 1805.	Recovered.	Unilocular.
84	Mrs. L.	47	Rockbury, Mass.	July, 1805.	Recovered.	Multilocular; weight, twenty-four pounds.
85	Mrs. D.	65	Penfield, N. Y.	Sept., 1805.	Recovered.	Growth, six months. Multilocular, left side; weight, twenty pounds. Uterine tumor not disturbed.

TABLE No. I. — COMPLETED OVARIOTOMIES. — *Continued.*

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
86	Mrs. A.	38	Near Laconia, N.H.	Oct., 1865.	Recovered.	Unilocular; weight, thirty pounds. Uterine tumor left.
87	Mrs. W.	..	Worcester, Mass.	Nov., 1865.	Recovered.	Multilocular.
88	Mrs. H.	..	Whitinsville, Mass.	Jan., 1866.	Recovered.	
89	Mrs. F.	34	Providence, R.I.	Feb., 1866.	Recovered.	Growth, eight years. Double operation. Right side, cyst multilocular. Left side, unilocular. Total weight, sixty-four pounds.
90	Mrs. D.	33	Middletown, Conn.	Feb., 1866.	Recovered.	Multilocular.
91	Mrs. L.	36	Chelsea, Mass.	Mar., 1866.	Recovered.	Unilocular.
92	Mrs. E.	..	Near Warren, R.I.	Mar., 1866.	Recovered.	
93	Mrs. W.	58	Bristol, R.I.	Mar., 1866.	Died.	Growth, three years. Chronic diarrhoea present. Unilocular cyst, right side; gangrenous; weight, forty-six pounds. Death on second day, exhaustion.
94	Mrs. R.	..	Narragansett, Mass.	April, 1866.	Recovered.	Multilocular.
95	Mrs. N.	..	Swanton, Vt.	June, 1866.	Recovered.	Remarkably simple case. Unilocular.
96	Mrs. K.	45	Ashford, Conn.	Sept., 1866.	Recovered.	Multilocular, left side.
97	Mrs. T.	44	E. Chaplin, Conn.	Sept., 1866.	Recovered.	Growth, fifteen years; unilocular, right side; slight adhesion; weight, sixty-five pounds.
98	Mrs. G.	44	Lowell, Mass.	Sept., 1866.	Recovered.	Growth, three years; everywhere adherent; multilocular, left side; weight, thirty pounds. Peritonitis followed for two weeks.
99	Mrs. P.	23	Somerville, Mass.	Oct., 1866.	Recovered.	Multilocular, right side; weight, thirty-four pounds.

100	Mrs. C.	47	Victor, N.Y.	Oct., 1866.	Recovered.	Tapped nineteen times. Fibro-cyst, left side; weight, twenty-four pounds.
101	Mrs. L.	62	Windham, Conn.	Dec., 1866.	Died.	Growth, three years; unilocular, left side; sac gangrenous and ruptured in early stages of operation. Death from septicæmia, fourth day.
102	Miss A.	18	New Hampshire.	Jan., 1867.	Recovered.	Growth, four years; unilocular; weight, twenty pounds.
103	Mrs. B.	46	Penfield, N.Y.	Feb., 1867.	Recovered.	Growth, one year; multilocular.
104	Mrs. W.	60	Milford, Mass.	Feb., 1867.	Recovered.	Multilocular.
105	Mrs. J.	..	Hoboken, N.J.	Mar., 1867.	Recovered.	
106	Mrs. H.	42	Douglass, Mass.	Mar., 1867.	Recovered.	Growth, six years; multilocular; one lobe impacted in true pelvis, right side.
107	Mrs. H.	38	Boston, Mass.	Mar., 1867.	Died.	Growth, two years. Extensive peritoneal adhesions; operation lasting two hours; multilocular, right side; sac walls degenerated; fluid grumous and offensive. Death from exhaustion, fifth day; weight of tumor, seventy pounds.
108	Miss L.	..	Chelsea, Mass.	April, 1867.	Recovered.	Unilocular.
109	Mrs. R.	..	Rhode Island.	May, 1867.	Recovered.	Multilocular.
110	Mrs. H.	36	Cedar Falls, Iowa.	May, 1867.	Recovered.	Multilocular. Weight, sixty pounds.
111	Mrs. H.	41	Chicago, Ill.	May, 1867.	Recovered.	Uncertain diagnosis. Operation showed fifteen pounds ascites, tumor of omentum and small ovarian cyst, left side. Unilocular.
112	Mrs. L.	..	Manchester, Conn.	June, 1867.	Recovered.	Great debility. Pulse, at day of operation 160; cyst wall broken down; complicated adhesions; multilocular, right side; weight, forty pounds.
113	Mrs. F.	..	New York.	July, 1867.	Recovered.	Simple case. Unilocular.
114	Mrs. M.	..	Near Chatham, N.Y.	July, 1867.	Recovered.	Multilocular.
115	Mrs. M'c.	..	Lowell, Mass.	July, 1867.	Recovered.	Unilocular.
116	Mrs. L.	..	Near Leicester, Mass.	July, 1867.	Recovered.	Uncertain diagnosis. Operation showed large amount of ascites and infarction of left ovary.

TABLE No. I.—COMPLETED OVARIOTOMIES. — *Continued.*

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
117	Mrs. W.	..	Near Clinton, Mass.	Aug., 1867.	Recovered.	Multilocular.
118	Mrs. S.	..	New Hampton, N.H.	Aug., 1867.	Recovered.	Unilocular.
119	Mrs. S.	..	Mattapoisett, Mass.	Sept., 1867.	Recovered.	Multilocular.
120	Mrs. T.	44	Uxbridge, Mass.	Oct., 1867.	Recovered.	Growth, six months. Multilocular. Simple case. During recovery was accidentally poisoned by overdose of Veratrum V., but rallied from this.
121	Mrs. J.	..	Lakeville, Mass.	Nov., 1867.	Recovered.	Unilocular. Simple case.
122	Mrs. S.	48	Laketown, Mass.	Nov., 1867.	.....	Growth, eighteen years. Prolapsus uteri. Uncertain diagnosis. Double tumor; right side dermoid; left side multilocular; total weight, forty-two pounds.
123	Mrs. R.	..	Providence, R.I.	Jan., 1868.	Recovered.	Unilocular.
124	Mrs. N.	..	Westford, Mass.	Jan., 1868.	Recovered.	Multilocular.
125	Mrs. P.	41	Holderness, N.H.	Feb., 1868.	Recovered.	Growth, three years. Extensive visceral adhesions. Double operation. Both multilocular. Tumors adhered to each other. Total weight, twenty-five pounds.
126	Mrs. H.	..	Fitchburg, Mass.	Feb., 1868.	Recovered.	Multilocular.
127	Mrs. L.	36	Chelsea, Mass.	Feb., 1868.	Recovered.	Unilocular.
128	Mrs. C.	..	Colchester, Conn.	Mar., 1868.	Recovered.	Multilocular.
129	Mrs. P.	..	No. Springfield, Vt.	Mar., 1868.	Recovered.	Multilocular, left side; weight, thirty-eight pounds.
130	Mrs. W.	..	Philadelphia, Pa.	April, 1868.	Recovered.	Unilocular.

131	Mrs. R.	43	Lowell, Mass.	April, 1868.	Recovered.	Multiblocular.
132	Mrs. C.	..	Kingston, Mass.	May, 1868.	Died.	Cause of death not known. Multiblocular.
133	Miss G.	..	Chester, N.H.	May, 1868.	Recovered.	Multiblocular.
134	Mrs. J.	34	Woonsocket, R.I.	May, 1868.	Recovered.	Multiblocular, right side; weight, thirty-six pounds.
135	Mrs. T.	50	Norwich, Conn.	June, 1868.	Died.	Extreme debility; extensive adhesion; cancer of liver. Multiblocular tumor. Death, second day, shock.
136	Mrs. P.	43	Garland, Mass.	June, 1868.	Recovered.	Ovarian combined with uterine fibroid, and extensively adherent to it. Small portion of ovarian cyst left adherent to the fibroid.
137	Mrs. S.	..	Duxbury, Mass.	July, 1868.	Recovered.	Unilocular.
138	Mrs. L.	..	St. Lawrence Co., N.Y.	Aug., 1868.	Recovered.	Multiblocular.
139	Mrs. B.	..	Templeton, Mass.	Aug., 1868.	Recovered.	
140	Mrs. S.	..	Assabet, Mass.	Sept., 1868.	Recovered.	Multiblocular.
141	Mrs. P.	..	Hartford, Conn.	Oct., 1868.	Recovered.	
142	Mrs. S.	37	Providence, R.I.	Oct., 1868.	Recovered.	Growth, two years; twice tapped. Multiblocular, right side, very adherent; weight, twenty-two pounds.
143	Mrs. M.A.	..	Near Douglas, Mass.	Oct., 1868.	Recovered.	
144	Mrs. M.	29	Canal, La East.	Oct., 1868.	Recovered.	Growth, four years. Firm peritoneal adhesions. Multiblocular.
145	Mrs. S.	..	New London, Conn.	Nov., 1868.	No report.	
146	Mrs. D.	..	Smithfield, R.I.	Nov., 1868.	Recovered.	Multiblocular.
147	Mrs. P.	..	Worcester, Mass.	Dec., 1868.	Recovered.	Multiblocular.
148	Mrs. G.	41	Near Springfield, Mass.	Dec., 1868.	Recovered.	Multiblocular.

TABLE NO. I.—COMPLETED OVARIOTOMIES. — *Continued.*

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
149	Mrs. M.	35	Gardner, Mass.	Jan., 1869.	Died.	Growth, two years. Previously, sac had twice ruptured. During anesthetizing the sac again ruptured. Unilocular cyst with inner wall disintegrated. Death, peritonitis, third day.
150	Mrs. F.	42	Lowell, Mass.	Jan., 1869.	Died.	Growth, six months. Everywhere adherent to omentum and all viscera. Unilocular, left side; weight, twenty-six pounds; pedicle very vascular. Death, peritonitis, third day.
151	Mrs. H.	34	Westerly, R.I.	Jan., 1869.	Recovered.	Multilocular.
152	Mrs. W.	..	Near Pittsfield, N.H.	Feb., 1869.	Recovered.	
153	Mrs. A.	47	Webster, N.Y.	Mar., 1869.	Recovered.	Growth, one year. Tapped six times; much ascites. Firm adhesions. Multilocular, left side; weight, twenty pounds.
154	Mrs. B.	35	Lowell, Mass.	Mar., 1869.	Died.	Growth, six months. Cancer of mesentery present. Unilocular, left side; weight, twenty-four pounds. Death, shock, forty-six hours.
155	Mrs. O.	..	Near Dover, N.H.	Mar., 1869.	Recovered.	Unilocular.
156	Mrs. H.	30	Lowell, Mass.	April, 1869.	Died.	Multilocular. Hospital case. Peritonitis, seventh day.
157	Mrs. B.	42	Woonsocket, R.I.	May, 1869.	Recovered.	Twenty years' growth; very adherent; multilocular. Pedicle several times twisted, accounting for slow growth and small size; weight, twenty pounds.
158	Mrs. C.	28	Boston, Mass.	June, 1869.	Died.	Great debility; unilocular; exhaustion.
159	Mrs. V.	..	Providence, R.I.	June, 1869.	Recovered.	Multilocular.
160	Mrs. D.	62	Providence, R.I.	Aug., 1869.	Died.	Double operation; both multilocular tumors; very adherent; weight, thirty-six pounds. Death; exhaustion, ninth day. Wound healed by first intention.

101	Mrs. L.	..	Hudson, N.H.	Sept., 1869.	Died.	Cause of death not stated.
102	Mrs. E.	-	Vermont.	Sept., 1869.	Recovered.	Multilocular.
103	Mrs. L.	37	Near Pawtucket, R.I.	Oct., 1869.	Recovered.	Unilocular.
104	Mrs. D.	-	Lowell, Mass.	Oct., 1869.	Recovered.	Multilocular.
105	Mrs. P.	60	Princeton, Me.	Nov., 1869.	Recovered.	Twice tapped; extensive adhesions. Multilocular, left side; weight, forty-two pounds. Part of omentum removed.
106	Miss B.	47	Mansfield, Conn.	Nov., 1869.	Died.	Unilateral hernia present; firm adhesions; fibro-cystic tumor. After division of the pedicle the ligature slipped, hence great hemorrhage, and death from exhaustion.
107	Mrs. D.	..	New York.	Dec., 1869.	Recovered.	Multilocular.
108	Mrs. R.	..	Near Fairfield, Vt.	Jan., 1870.	Recovered.	
109	Mrs. M.	..	Reading, Mass.	Mar., 1870.	Died.	Multilocular. Cause of death unknown.
170	Mrs. S.	..	Near Springfield, Vt.	April, 1870.	Recovered.	Multilocular.
171	Mrs. F.	-	New York City.	June, 1870.	Recovered.	Unilocular.
172	Mrs. K.	..	New York City.	June, 1870.	Recovered.	
173	Mrs. B.	..	Massachusetts.	Aug., 1870.	Recovered.	Multilocular, right side.
174	Mrs. P.	..	Ellington, Conn.	Sept., 1870.	Recovered.	
175	Mrs. D.	..	New Hampton, N.H.	Oct., 1870.	Recovered.	Multilocular.
176	Mrs. C.	38	Lowell, Mass.	Nov., 1870.	Recovered.	Growth, two years; adherent to all viscera; whole broad ligament included in twenty ligatures. Unilocular; third day suppurative peritonitis appeared. On tenth day a piece of peritoneal tissue, four inches by five inches, came away; the twenty-second day, piece six inches by nine inches came away, with remaining ligatures; then rapid recovery.

TABLE No. I. — COMPLETED OVARIOTOMIES. — *Continued.*

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
177	Mrs. B.	48	Providence, R.I.	Dec., 1870.	Died. (?)	Adherent omental tissue removed. Unilocular, right side; weight, twenty pounds. Recovery perfect, till fourth week, when sudden septicaemia and death. Autopsy showed abscess in cul-de-sac of Douglas.
178	Mrs. J.	..	Randolph, Mass.	Jan., 1871.	Recovered.	Multilocular.
179	Mrs. D.	36	Boston, Mass.	Jan., 1871.	Recovered.	
180	Mrs. K.	38	Providence, R.I.	Feb., 1871.	Died.	Large unilocular cyst; weight, sixty-one pounds. Death from exhaustion.
181	Mrs. F.	38	Lovell, Mass.	Mar., 1871.	Recovered.	Multilocular.
182	Mrs. P.	22	No. New Portland, Me.	April, 1871.	Recovered.	Multilocular tumor of eighteen pounds in a woman weighing two hundred and ten pounds.
183	Mrs. L.	..	Johnstone, N.Y.	April, 1871.	Died.	Cause of death unknown.
184	Mrs. I.	..	New York.	May, 1871.	Recovered.	Multilocular.
185	Mrs. McC.	45	Bridgeport, Conn.	May, 1871.	Died.	Multilocular tumor, with most extensive adhesions. Death from peritonitis.
186	Mrs. H.	..	Chelsea, Mass.	June, 1871.	Recovered.	Multilocular.
187	Mrs. B.	35	Washington, Vt.	June, 1871.	Recovered.	Multilocular, left side; everywhere adherent; nine times tapped.
188	Mrs. P.	26	Cromwell, Conn.	July, 1871.	Recovered.	Firm adhesions; multilocular, right side; weight, forty-four pounds; five years' growth; twice tapped; peritonitis attacks.
189	Mrs. J.	..	Woonsocket, R.I.	July, 1871.	Recovered.	Second operation. Multilocular cyst.
190	Mrs. H.	..	Marshfield, Mass.	July, 1871.	Recovered.	Multilocular.

191	Mrs. C.	40	Lowell, Mass.	Aug., 1871.	Recovered.	Unilocular.
192	Mrs. B.	48	Hopewell, N.Y.	Aug., 1871.	Recovered.	Growth, six years; prolapsus uteri; large amount of ascites; omental adhesions had to be ligated; multilocular, right side.
193	Mrs. J.	..	New York City.	Aug., 1871.	Recovered.	Multilocular.
194	Mrs. O.	..	Cayuga Co., N.Y.	Aug., 1871.	Recovered.	Multilocular.
195	Mrs. G.	..	Boston, Mass.	Sept., 1871.	Recovered.	Multilocular.
196	Mrs. H.	..	Elmira, N.Y.	Sept., 1871.	Recovered.	Multilocular.
197	Mrs. P.	40	Lowell, Mass.	Sept., 1871.	Died.	Died from catharsis, produced by the ignorance of attendants. Multilocular tumor; weight, thirty-two pounds.
198	Mrs. P.	..	Middleton, Conn.	Sept., 1871.	No report.	
199	Mrs. D.	43	Providence, R.I.	Sept., 1871.	Recovered.	Unilocular.
200	Mrs. C.	28	Houlton, Me.	Oct., 1871.	Recovered.	Growth, one year; unilocular; weight, forty-four pounds.
201	Mrs. H.	38	Biddeford, Me.	Oct., 1871.	Recovered.	Growth, eight months; twice tapped, once with complete collapse of sac. Extensive adhesions; operation lasting two hours; weight of tumor, sixty-five pounds. Unilocular, left side.
202	Mrs. M.	..	Worcester, Mass.	Oct., 1871.	Recovered.	Multilocular.
203	Miss N.	22	Fairfield, Vt.	Oct., 1871.	Recovered.	Growth, two years; preceded by peritonitis; twice tapped; firm adhesions. Unilocular, right side; weight, sixty-four pounds.
204	Mrs. H.	40	Lowell, Mass.	Nov., 1871.	Recovered.	Multilocular.
205	Mrs. A.	57	Bridgeport, Conn.	Nov., 1871.	Died.	Growth, ten months; vascular adhesions. Peritoneum congested and studded with small tubercles. Omentum in masses. Tumor a filo-cyst; weight, twenty pounds. Death from shock, second day.

TABLE No. I. — COMPLETED OVARIOTOMIES. — *Continued.*

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
206	Mrs. McA.	33	Port Byron, N.Y.	Jan., 1872.	Died.	Growth, eight years; six times tapped, and two hundred and nine pounds of fluid taken away; double operation, both multilocular. Total weight, sixty-one pounds. Death from shock, second day.
207	Mrs. C.	..	Near Gardiner, Mass.	Jan., 1872.	Recovered.	Multilocular.
208	Mrs. B.	..	Schuler Co., N.Y.	Feb., 1872.	Recovered.	Growth, two years. Ovary adherent to uterine fibroid. Unilocular, left side.
209	Mrs. McK.	..	Pascoag, R.I.	Feb., 1872.	Recovered.	Dermoid, left side.
210	Mrs. W.	40	Lowell, Mass.	Feb., 1872.	Recovered.	Multilocular, small, and seemed to be developed in the pedicle of a tumor previously removed.
211	Mrs. B.	..	Vermont.	Mar., 1872.	Recovered.	Multilocular; weight, forty-eight pounds.
212	Mrs. E.	..	Boston, Mass.	Mar., 1872.	Recovered.	
213	Mrs. B.	42	Hopewell, N.Y.	May, 1872.	Uncertain.	
214	Mrs. C.	..	Chemung Co., N.Y.	May, 1872.	Recovered.	
215	Miss E.	19	Starkville, N.Y.	May, 1872.	Recovered.	Double operation; both sides multilocular; three times tapped. Great debility. Operation at one time suspended to restore vitality. Weight, sixty-five pounds.
216	Mrs. H.	43	Boston, Mass.	June, 1872.	Recovered.	Multilocular, left side.
217	Mrs. C.	..	Fulton Co., N.Y.	June, 1872.	Recovered.	Multilocular.
218	Mrs. G.	..	Cayuga Co., N.Y.	June, 1872.	Recovered.	Unilocular.
219	Mrs. H.	35	Charlestown, Mass.	June, 1872.	Recovered.	Multilocular, left side. Hernia resulted from non-closure of the recti-muscles.

220	Miss T.	..	Buckland, Conn.	July, 1872.	Recovered.	Multilocular.
221	Mrs. O.	.	Bridgeport, Conn.	Aug., 1872.	Recovered.	
222	Mrs. R.	50	Norwich, Conn.	Sept., 1872.	Recovered.	Growth, six months. Four times tapped. Extensive adhesions from peritonitis. Multilocular, left side.
223	Mrs. S.	.	Gardiner, Mass.	Sept., 1872.	Recovered.	
224	Mrs. S.	29	Lowell, Mass.	Sept., 1872.	Died.	Multilocular; weight, forty pounds; death, exhaustion.
225	Mrs. T.	..	Near Cohituate, Mass.	Sept., 1872.	Recovered.	Multilocular.
226	Mrs. S.	35	Massachusetts.	Oct., 1872.	Recovered.	Multilocular, right side; weight, thirty pounds.
227	Mrs. T.	34	Boston, Mass.	Jan., 1873.	Recovered.	Unilocular, right side; weight, fifteen pounds.
228	Mrs. M.	.	Detroit, Mich.	Jan., 1873.	Recovered.	Multilocular.
229	Mrs. C.	24	Williston, Vt.	April, 1873.	Died.	Growth, one year. Uncertain diagnosis. Great debility, constipation, and much ascites. Tumor, a fibroma of left ovary impacted in true pelvis, causing intestinal stricture; weight, seven pounds. Death from shock, first day.
230	Mrs. C.	..	Connecticut.	May, 1873.	Recovered.	Multilocular.
231	Mrs. W.	22	Belvidere, Vt.	May, 1873.	Recovered.	Growth, four years. Unilocular, left side. Enucleation by Dr. Miner's method. Weight, fifty-two pounds.
232	Mrs. P.	..	Manchester, N.H.	May, 1873.	Recovered.	Multilocular.
233	Mrs. M.	.	Hingham, Vt.	July, 1873.	Died.	Growth, four years. Great debility; multilocular, left side; weight, thirty-eight pounds. Death from exhaustion, second day.
234	Mrs. D.	.	Newmarket, N.H.	Aug., 1873.	Died.	Cause of death unknown. Multilocular.
235	Mrs. W.	..	Wilmington	Nov., 1873.	Recovered.	Multilocular.

TABLE No. I. — COMPLETED OVARIOTOMIES. — *Continued.*

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
236	Mrs. N.	..	Newport, Vt.	Jan., 1874.	Recovered.	
237	Mrs. A.	..	Berlin, Conn.	April, 1874.	Died.	Adherent to peritoneum and all viscera. Inner wall of sac degenerated. Multilocular. Weight, sixty-four pounds. Death from septicæmia, fourth day.
238	Mrs. S.	..	Herkimer Co., N.Y.	April, 1874.	Died.	Multilocular. Evidences of malignancy. Death from exhaustion.
239	Mrs. C.	..	Lawrence, Mass.	May, 1874.	Died.	Tumor, a fibroma. Considered to be malignant from congested peritoneum and hardened omentum. Death from shock.
240	Mrs. S.	57	Smith Valley, N.Y.	May, 1874.	Recovered.	Multilocular, right side.
241	Mrs. R.	..	Seneca Co., N.Y.	May, 1874.	Recovered.	Multilocular.
242	Mrs. McC.	48	Lowell, Mass.	June, 1874.	Recovered.	Unilocular, left side.
243	Mrs. C.	59	Huron Co., N.Y.	June, 1874.	Died.	Growth, six years. Large amount of ascites. Four times tapped. Firm adhesions. Fibroma, left side. Death, peritonitis.
244	Mrs. W.	..	Hartford, Conn.	July, 1874.	Recovered.	Unilocular.
245	Mrs. T.	..	Lowell, Mass.	Sept., 1874.	Recovered.	Multilocular.
246	Mrs. P.	38	Acton, Mass.	Oct., 1874.	Recovered.	Growth, four years. Multilocular.
247	Miss McN.	18	Colchester, Conn.	Dec., 1874.	Recovered.	Growth, four years. Several inflammatory attacks. Very vascular adhesions. Multilocular, right side; weight, thirty-five pounds.
248	Mrs. B.	28	Lowell, Mass.	Jan., 1875.	Recovered.	Multilocular, left side.
249	Mrs. K.	..	Manchester, Conn.	Feb., 1875.	Recovered.	Dermoid, left side.

250	Mrs. W.	57	Windsor Locks, Ct.	Feb., 1875.	Recovered.	Growth, four years. Twice tapped. Multilocular, right side; weight, thirty pounds.
251	Mrs. P.	49	Westerly, R.I.	April, 1875.	Recovered.	Growth, eight months. Multilocular, right side; weight, forty-four pounds. Uncontrollable retching for two days. On removing dressings there was found a small hernia between the sutures. On reduction of this all bad symptoms disappeared.
252	Mrs. W.	35	Providence, R.I.	May, 1875.	Recovered.	Three years' growth. Multilocular, left side. One lobe impacted in the pelvis.
253	Miss C.	28	Hyannis, Mass.	June, 1875.	Recovered.	Six years' growth. Very vascular adhesions. Multilocular.
254	Mrs. A.	38	Warren, R.I.	June, 1875.	Recovered.	Multilocular.
255	Mrs. C.	..	Illinois.	July, 1875.	Recovered.	Unilocular.
256	Mrs. H.	..	Chicago, Ill.	July, 1875.	Recovered.	Multilocular, left side.
257	Mrs. O.	40	Chicago, Ill.	Aug., 1875.	Recovered.	Growth, nine months. Uncertain diagnosis. Large amount of ascites. Vascular intestinal adhesions. Multilocular, left side; weight, fifty pounds.
258	Mrs. B.	49	Granby, Vt.	Oct., 1875.	Recovered.	Twice tapped. Cyst ruptured during operation. Fibro-cyst, right side.
259	Mrs. W.	33	Milford, N.H.	Oct., 1875.	Recovered.	Cyst ruptured during operation. Vascular intestinal adhesions requiring ligatures. Multilocular, right side.
260	Mrs. W.	58	Springfield, Mass.	Nov., 1875.	Died.	Growth, fifteen years. Several times tapped. Double operation; both tumors multilocular; weight, fifty-two pounds. Death, diphtheria, seventh day.
261	Mrs. W.	57	Eastford, Conn.	Nov., 1875.	Recovered.	Growth, thirty-two years. Cyst had ruptured several years before operation. Double tumor, fibroma, left side. Small cyst, right side.
262	Mrs. S.	..	Boston, Mass.	Jan., 1876.	Recovered.	Multilocular.
263	Miss F.	22	Lowell, Mass.	Feb., 1876.	Died.	Growth, eight years. General anasarca from chronic nephritis. Multilocular, right side; death, exhaustion, sixth day.

TABLE No. I.—COMPLETED OVARIOTOMIES. — *Concluded.*

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
264	Miss T.	38	Massachusetts.	Feb., 1876.	Recovered.	Fibro-cyst; left side.
265	Miss F.	35	Stafford, Conn.	April, 1876.	Recovered.	Multilocular; left side.
266	Miss B.	40	Norwich, Conn.	May, 1876.	Recovered.	Operation followed by peritonitis. Multilocular.
267	Mrs. C.	38	Cayuga, N.Y.	May, 1876.	Recovered.	Multilocular; weight, twenty pounds.
268	Mrs. S.	64	St. Lawrence Co., N.Y.	May, 1876.	Recovered.	Mitral stenosis. Multilocular tumor.
269	Mrs. B.	62	Malden, Mass.	June, 1876.	Recovered.	Had had several peritonitic attacks.
270	Mrs. A.	62	Hyannisport, Mass.	Aug., 1876.	Recovered.	Tuberculosis of lung present. Multilocular tumor.
271	Mrs. L.	40	Lowell, Mass.	Sept., 1876.	Recovered.	Multilocular, left side; sac ruptured during operation; weight, forty-four pounds.
272	Mrs. M.	59	Edmeston, N.Y.	Sept., 1876.	Recovered.	Very vascular adhesions. Multilocular, right side; weight, twenty-five pounds.
273	Mrs. A.	64	Norwich, Conn.	Nov., 1876.	Died.	Septicæmia present at time of operation. Double operation, and two tumors on same side; one unilocular; other multilocular; death, septicæmia.
274	Mrs. R.	50	West Concord, Vt.	June, 1877.	Recovered.	Growth, six months. Intestinal adhesion; multilocular, left side.
275	Miss B.	28	Saxtonville, Mass.	Sept., 1877.	Recovered.	Morbus coxipanis present. Multilocular, left side; very broad vascular adhesions; weight, twenty-six pounds.
276	Mrs. W.	25	Vermont.	Sept., 1877.	Recovered.	Small, multilocular tumor; the outgrowth of an old pedicle left from a former operation.

277	Mrs. W.	..	Willimantic, Conn.	Nov., 1878.	Recovered.	Multilocular.
278	Mrs. C.	54	Genesee, N.Y.	Nov., 1878.	Died.	Firm adhesions to cancerous liver and omentum; multilocular; death, shock.
279	Miss M.	30	Lowell, Mass.	Jan., 1879.	Died.	Dermoid, left side; died of peritonitis, ninth day.
280	Mrs. W.	50	Waverly, Mass.	July, 1881.	Recovered.	Multilocular, left side; weight, thirty-six pounds. Ventral hernia remained.
281	Mrs. J.	41	Northampton, Mass.	Dec., 1881.	Died.	Dermoid cyst; firm adhesions; death, peritonitis, fifth day.

TABLE No. II. — HYSTERECTOMIES.

No.	Name.	Age.	Place of Operation.	Date.	Weight.	Result.	Remarks.
282	Miss L.	38	Lowell, Mass.	June, 1853.	14 lbs.	Recovered.	Interstitial fibroid and double ovarian.
283	Mrs. B.	41	Pittsfield, N.H.	Aug., 1854.	8 lbs.	Died.	Interstitial. Died of septicemia in five days.
284	Mrs. —	38	Lee, N.H.	June, 1857.	6 lbs.	Died.	Interstitial. Peritonitis, third day.
285	Mrs. R.	33	Lowell, Mass.	Nov., 1857.	12 lbs.	Died.	Interstitial. Shock, fourth day.
286	Mrs. H.	44	Rochester, N.Y.	Feb., 1858.	25 lbs.	Died.	Subperitoneal. Shock, second day.
287	Mrs. C.	50	Providence, R.I.	Sept., 1864.	10 lbs	Recovered.	Interstitial.
288	Miss W.	32	Maine.	Oct., 1864.	15 lbs.	Died.	Interstitial. Peritonitis, thirteenth day, from exposure to rain on the ninth day.
289	Miss A.	15	Connecticut.	June, 1867.	16 lbs.	Died.	Interstitial and subperitoneal, with ovarian fibroma. Pyemia
290	Mrs. G.	37	Boston, Mass.	Mar., 1868.	11 lbs	Died.	Interstitial. Death, of collapse, and with immense outpouring of serum from peritoneal surfaces.

TABLE No. II. — HYSTERECTOMIES. — *Concluded.*

No.	Name.	Age.	Place of Operation.	Date.	Weight.	Result.	Remarks.
291	Miss G.	40	Boston, Mass.	May, 1869.	12 lbs.	Died.	Subperitoneal. Catharsis, second day.
292	Mrs. F.	42	Lowell, Mass.	April, 1870.	9 lbs.	Died.	Interstitial. Exhaustion, sixth day.
293	Mrs. G.	50	New York.	Oct., 1870.	18 lbs.	Died.	Interstitial. Peritonitis, third day.
294	Mrs. H.	52	Lyons, N.Y.	Feb., 1872.	18 lbs.	Died.	Subperitoneal. Rupture was found through the tumor, and the abdominal cavity filled with blood. Septicæmia, third day.
295	Mrs. K.	53	Centreville, R.I.	Dec., 1873.	7 lbs.	Died.	Interstitial fibro-cyst. Operation was not expected, but became necessary from hemorrhage into the cyst during tapping. Death from cutting through of ligatures during operation, and resulting hemorrhage.
296	Miss K.	43	Connecticut.	May, 1876.	22 lbs.	Recovered.	Fibro-cyst; much broken down.

TABLE No. III. — PARTIAL REMOVALS OF OVARIAN AND UTERINE TUMORS.

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
297	Mrs. F.	54	Lowell, Mass.	June, 1854.	Recovered.	Tumor many times tapped, and frequent attacks of peritonitis. Permanent drainage. Lived eight months.
298	Mrs. B.	60	Rhode Island.	May, 1855.	Recovered.	Very large tumor; much broken down, and great exhaustion of patient. Lived six weeks.

299	Mrs. B.	44	Cedar Falls, Iowa.	May, 1867.	Recovered.	Very large tumor; everywhere adherent; cyst did not refill. Died in six months, of pneumonia.
300	Mrs. E.	..	Providence, R.I.	Jan., 1868.	Recovered.	Lived eight months.
301	Mrs. J.	..	New York.	April, 1874.	Recovered.	Ovarian; complicated with uterine growth. Patient lived two years.
302	Mrs. W.	59	Lowell, Mass.	April, 1878.	Died.	Four years' growth; vast size; extending to knees when standing. Whole amount removed weighed one hundred and thirty pounds. Patient died on table.
303	Mrs. W.	..	New Jersey.	Aug., 1854.	Recovered.	Subperitoneal fibroma; removed.
304	Miss D.	52	New Hampshire.	May, 1858.	Died.	Subperitoneal fibroma; removed. Death, of shock.
305	Miss L.	38	Connecticut.	July, 1868.	Recovered.	Subperitoneal fibro-cyst; removed at fundus.
306	Miss F.	41	Rhode Island.	Sept., 1873.	Died.	Very vascular subperitoneal fibroma, with long pedicle; mistaken for ovarian. Removed, and death from hemorrhage.
307	Miss C.	44	Connecticut.	April, 1877.	Died.	Much degenerated subperitoneal fibroma, cystic. Exhaustion on fourth day.
308	Miss P.	56	New York.	Nov., 1877.	Died.	Subperitoneal fibro-cyst, removed at fundus. Death, of shock.
309	Miss H.	39	Massachusetts.	Aug., 1881.	Died.	Very large fibro-cyst, removed near fundus. Death, of exhaustion, fourth day.

TABLE No. IV. — EXPLORATORY OPERATIONS.

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
310	Mrs. B.	57	Ireland, R.I.	May, 1855.	Recovered.	Ovarian complicated with uterine tumor.
311	Mrs. L.	60	Massachusetts.	Nov., 1857.	Died.	Very adherent ovarian tumor reaching into true pelvis, and immovable. Death, of exhaustion.

TABLE No. IV. — EXPLORATORY OPERATIONS. — *Continued.*

No.	Name.	Age.	Place of Operation.	Date.	Result.	Remarks.
312	Mrs. L.	..	Hartford, Conn.	Jan., 1858.	Recovered.	Adherent ovarian tumor of moderate size.
313	Mrs. W.	..	Massachusetts.	June, 1859.	Recovered.	Double ovarian cystoma, immovable.
314	Mrs. P.	..	Near Augusta, Me.	July, 1861.	Recovered.	Multilocular ovarian; adherent.
315	Mrs. I.	41	Rhode Island.	Aug., 1866.	Died.	Ovarian cyst had previously ruptured, and peritonitis set in. Impossible to remove.
316	Mrs. H.	52	Fall River, Mass.	Nov., 1868.	Died.	In four months one hundred and thirty-five pounds of fluid had been removed; at time of operation sixty-live more; ovarian cyst everywhere adherent; death by exhaustion.
317	Mrs. T.	..	Mt. Hope, Conn.	Sept., 1874.	Died.	Ovarian cyst terribly degenerated; impossible to move. Death, of peritonitis, on fifth day.
318	Mrs. H.	60	Northampton, Mass.	Dec., 1880.	Died.	Patient old and emaciated, and died of exhaustion on fourth day.
319	Mrs. J.	36	Norwich, Conn.	Mar., 1882.	Died.	Ovarian dermoid cyst with adherent uterine fibroma, which had absorbed the contiguous cyst wall and projected into the cavity of the cyst. Death, of peritonitis.
320	Miss H.	34	Stockbridge, Mass.	June, 1854.	Died.	Large fibroid of uterus; very adherent. Not disturbed; exhaustion on the fourth day.
321	Miss H.	..	Near Hartf'd, Conn.	Oct., 1854.	Died.	Vascular fibroma of uterus simulating ovarian cystoma. Death, of exhaustion.
322	Miss M.	..	New Haven, Conn.	Mar., 1857.	Died.	Large fibro-cyst of uterus with carcinoma uteri. Not disturbed; death, of exhaustion.
323	Miss W.	35	Portland, Me.	June, 1857.	Recovered.	Adherent subperitoneal fibroma.
324	Miss A.	..	Charlestown, Mass.	Sept., 1857.	Died.	Ineffectual attempt to remove subperitoneal fibro-cyst.

TABLE NO. V. — OMENTAL TUMORS.

No.	Name.	Age.	Place of Operation.	Date.	Results.	Remarks.
327	Mrs. R.	43	Lowell, Mass.	Sept., 1874.	Recovered.	
328	Mrs. G.	60	New Market, N.H.	Nov., 1881.	Recovered.	

325	Mrs. M.	..	Hoboken, N.J.	Sept., 1857.	Recovered.	Operation to relieve from impaction of filloil in true pelvis.
326	Mrs. P.	..	Springfield, Mass.	April, 1858.	Recovered.	Operation to relieve from impacted fibroid.
327	Mrs. A.	..	New York.	May, 1867.	Died.	Uterine fibroma not disturbed. Death, of peritonitis.
328	Mrs. C.	42	Pawtucket, R.I.	Nov., 1868.	Died.	Large fibro-cyst. Tapped; death on fifth day from hemorrhage into the cyst.
329	Miss P.	32	Canada.	Sept., 1871.	Recovered.	Diagnosis not revealed by operation. Lived some weeks. Autopsy showed large uterine fibro-cyst and compound ovarian cystomata.
330	Mrs. C.	50	Massachusetts.	Dec., 1872.	Recovered.	Uterine fibro-cyst; tapped.
331	Miss E.	40	Worcester, Mass.	June, 1854.	Died.	Mistaken diagnosis. Cancer of ilio-cæcal juncture with ascites; mistaken for ovarian cyst.
332	Mrs. G.	..	Providence, R.I.	May, 1857.	Recovered.	Mistaken diagnosis. Cancer of liver, uterine fibroma and albuminous ascites; mistaken for ovarian cystoma.
333	Mrs. A.	..	Webster, N.Y.	June, 1871.	Died.	Mistaken diagnosis. Very large sub-peritoneal abscess mistaken for ovarian cyst.
334	Mrs. R.	54	Lowell, Mass.	Sept., 1851.	Died.	Mistaken diagnosis. Cancer of liver and omentum, with ascites.
335	Mrs. P.	60	Worcester, Mass.	Dec., 1874.	Died.	Mistaken diagnosis. Cancer of peritoneum and albuminous ascites.
336	Mrs. B.	56	Fitchburg, Mass.	Mar., 1875.	Died.	Mistaken diagnosis. Cancer of liver and omentum, with ascites.

SYNOPSIS OF COMPLETED OVARIOTOMIES.

	No. of Cases.	Recovered.	Died.	Mortality.
Total	281	230	51	18.1+%
Cystoma, both ovaries	13	8	5	38.45
Cystoma, one ovary	236	199	37	15.7+%
This, however, includes all dermoid, fibroid, and fibro-cystic tumors. Excluding these, there were,				
Multilocular	221	191	30	14.6+%
Unilocular	162	142	20	12.3+%
Unilocular	59	49	10	16.9+%
Dermoid cysts	7	4	3	42.8+%

Includes Successful Case of Double Cystoma.

Fibroma of ovary	5	2	3	60%
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Includes Unsuccessful Case of Double Cystoma.

Fibro cyst of ovary	5	3	2	40%
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N.B. — Character of Cyst thus Reported in 249 out of the 281 Cases.

Weight given in 72. Per cent. mortality over 40 lbs. = 34.6%

“ “ “ under “ = 17.7%

Death Indicated in 41 Cases.

Exhaustion	11	Diphtheria	2
Peritonitis	9	Catharsis	2
Shock	9	Hæmophilia	1
Septicæmia	5	Chronic diarrhoea	1

SYNOPSIS OF HYSTERECTOMIES.

	Cases.	Recovered.	Died.	Mortality.
Total	15	3	12	80%

SYNOPSIS PARTIAL REMOVALS OF OVARIAN AND UTERINE TUMORS.

	Cases.	Recovered.	Died.	Mortality
Ovarian	6	5	1	16.6+%
Uterine	7	2	5	71.4+%
Total	13	7	6	46.1+%

SYNOPSIS OF EXPLORATORY OPERATIONS.

	Cases.	Recovered.	Died.	Mortality.
For ovarian growths	10	4	6	60%
For uterine growths	11	5	6	54.5+%
Other abdominal diseases (mistaken diagnosis)	6	1	5	83.3
Total	27	10	17	62.9+%

SYNOPSIS OF THE CASES.

	Cases.	Recovered.	Died.	Mortality.
Total	2	2	0	0

GRAND TOTAL ABDOMINAL SECTION.

	Cases.	Recovered.	Died.
Completed ovariotomies	281	271	57
Hysterectomies	15	3	12
Partial removal ovarian and uterine growths	13	7	6
Exploratory operations	27	10	17
Ovarian tumors	2	2	0
	338	293	85
Percent recovery		74.5+	
Percent mortality		25.4+	
		100.	

QUININE AS AN OXYTOMIC.

BY A. CORDES, M.D., PARIS.

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EVERY one knows the action of sulphate of quinine in malarial affections, but its utero motor property is not so generally acknowledged. I thought, accordingly, that it might not be uninteresting for the members of the *Detroit Gynecological Society* to sum up, in a few lines, my exposition of it.

I noticed, oftentimes, the failure of ergot in promoting uterine action in hemorrhagè, or to expel the uterine contents. This failure, I observed, was caused mostly by the fact that ergotic contraction invades the cervix as well as the body of the uterus, whence it results that the uterine contents, detached it may be by the contraction of the body, are driven against the unyielding orifice; they come to a locked door, then putrefy, and septic stuff will be absorbed. The fact was graphically expressed by Pajott when he says, "The wolf is locked in the sheepfold."¹

I was, consequently, induced to look for some other agent which could be relied upon in case of retention of the secundines, or clots, especially after miscarriage. Then I read Bendell's articles in "Annales de Gynécologie," 1871, t. I., p. 407, and t. II., p. 30, and Barthouze's (1872), Delasage's (1873) "Thèses de Paris," Rancillia's Memoir in "Courier Medical," 1873, R. Gray's letter in "Obstet. Journ. of Great Britain," 1873-4, p. 1081, Trosacand Monteverdi's, Deloni's, etc., Memoirs, and

¹ See the lectures on retention of the placenta, "Gazette de Hôpitals," 1859, p. 132 et 133, which are a repetition of what he taught his pupils many years ago. See, also, *Stapfer's* articles on *Seigne et Purgé* in "Union Médicale," 1869, t. I., p. 37 et 109.

Gubbe's opinion, who says: "It is possible that quinine wakens or excites the contraction of the uterus." And I thought, if quinine might be caused to bring on abortion, it must have some *ecbolic* action. My first trial of it, in case of retention of secundines, if my memory is good, goes as far back as 1876, in the following case:—

CASE I.—Mrs. A. sends for me, one hundred and seven days after an abortion, which the midwife said was complete; she loses much blood, cervix closed. Ergot and turpentine tried, but to no effect. On the one hundred and ninth day I prescribed two grammes (half a dram) of sulphate of quinine, to be taken in twenty hours.

The following day, Mrs. A. shows to me a fragment of placenta, as large as a small hen's egg, *perfectly fresh*, without any offensive smell, which she had expelled, after suffering pains similar to labor pains. Cervix open, hæmorrhage trifling. These placental remains, which escaped the midwife's notice, were adhering in the uterus for one hundred and nine days, keeping a more or less profuse hæmorrhage going on all the time, till Mrs. A. sent for me.

The fact that the placental fragment was quite inoffensive shows that it went on *living* on the uterine surface. Except the hæmorrhage, there was no danger. Had I curetted,—curetting was not so common in 1876 as it is now,—I think I might have left some pieces of the placenta, which would have decomposed and become putrid, as would have happened in the following case, but for the ecbolic action of the *urtilago maidis*.

On August 21, 1886, comes in my ward, a patient who has just aborted; placenta not wholly expelled. My assistant at the *Maternité*, who is very proud of his skill in the use of the curette, curettes the uterus, makes an intra-uterine antiseptic injection, and affirms he has got all out. However, I prescribe extract of *urtilago maidis*, ten drops every hour till the afternoon visit. The next morning, I am told, the patient has expelled a large piece of placenta after some painful contractions. She then went on all right.

This case, and many other ones which I might report, entitle me, I think, to say, that curetting must be reserved for cases in which the placental remains are very small, not much adherent, and are offensive. Then, of course, the cervix must be dilated and well irrigated with antiseptic solution, though I would generally prefer the *écouvillonnage* of Doleris. When the piece of placenta is large, adherent, and not offensive, the action of quinine will detach it, force it out of the cervix in one lump, not piecemeal, as does the curette. We must notice one important fact: the smaller and the less adherent the pieces of placenta or membrane, the more *inclined* they are to putrefy, and unless we are quite sure of being

able to extract them whole at one time we had better try to cause the fragments to be expelled by the uterine contraction wrought by quinine, or in some cases by *utilago mandis*. I would much prefer, in case the patient is not flooding to death, or the discharge is not very offensive, to prescribe an utero-motor, than to use the curette. Quinine answers to all the indications; it acts on the fever, it promotes the contraction in the body of the uterus, *not in the cervix*, leaving the door open for the contents to be expelled. I am so persuaded of this that I do not remember having ever curetted, in my private practice, for a case of abortion; and the quinine acts so wonderfully in these cases that, however anxious to try Doleri's *decurvillon*, I have not, as yet, had an occasion for employing it.

CASE II. — Mrs. P., one of my patients, pregnant three or four months, was taken suddenly, in the course of September, 1880, *during my vacation*, with a flooding. Dr. X. was called in and succeeded in stopping the hæmorrhage by the usual means. He does not seem to have suspected the pregnancy, Mrs. P. being in the change of life, and very irregular. On October the 28th, about one month after, Mrs. P. sent for me, for a return of the hæmorrhage. I at once prescribed two grammes of sulphate of quinine to be taken in the course of the day. Mrs. P. was taken with expulsive pains, and, forty-eight hours later, I picked off with my finger a piece of placenta, almost inoffensive. In that case the fragment was partly adherent to the uterine wall, and was cast off by the action of quinine. If I had — as I did in many cases which it would be too long to narrate — tried to take it with forceps, I should have got it piecemeal, and the small part remaining in the womb would have become *putrefied*, and Mrs. P. would have run the risk of hæmorrhage and of *septicæmia*. She got well soon after the expulsion of the placenta.

CASE III. — On May the 9th, 1884, I was called to Mrs. P., who, being near the term of her third pregnancy, suffered from intense facial neuralgia. Every medicament failing to relieve her, I determined to try quinine, which seemed unable to do any harm, Mrs. P. expecting every day to be delivered, and having already some irregular uterine contractions. Under the influence of quinine the neuralgia was relieved, the pains became less frequent, and Mrs. P. was delivered normally two or three days later.

CASES IV. and V. — In these two cases (August 25 and December 12, 1886), quinine succeeded in the menorrhagia of the change of life.

CASE VI. — On September 16, 1886, I was called at some distance by Dr. M. to Miss C., who had miscarried five weeks before, of a two months' embryo; high fever, vomiting, tenderness of the abdomen; temperature 104°, etc. Nothing in the vaginal cul-de-sac; although the cervix is not patulous, and the fundus uteri is not painful to pressure. I

suspected that some piece of the secundines remained in utero (case of criminal abortion by a midwife). After some difficulty I got Dr. M. to give his patient two grammes of quinine in the course of twenty hours. I heard that, the next day, Miss C. expelled a piece of offensive placenta, and she recovered in a few days.

CASE VII. — December 14, 1886, Mrs. V. has just expelled a three months' fœtus, and has a smart hæmorrhage. I feel the placenta, adherent to the posterior part of the uterus; however, I prefer not to interfere with the ovum forceps; usual dose of quinine; expulsion of the placenta after five in the afternoon. Mrs. V. being very anæmic, the convalescence has been slow, but the discharge has never been offensive.

On January 7, 1888, the same Mrs. V. was taken with an abundant loss of blood, which she first mistook for her period, coming six weeks after another miscarriage. The hæmorrhage has been so profuse that Mrs. V. is nearly unable to speak, — she says she is dying. The pulse is very hard, and the action of the heart is irregular. Quinine — one gramme to be taken in twenty hours. In the afternoon of the same day the hæmorrhage stopped; there was only a slight oozing of blood; expulsion of a "clot," which unfortunately was not kept. Mrs. V. is improving every day (January 10).

CASE VIII. — October 5, 1887, Mrs. S. aborted twenty-five days ago of a three months' fœtus; the placenta did not come away as is usually the case at that period of pregnancy. Hæmorrhage profuse. The midwife, one of my pupils, fetches me at the *Maternité* in a hurry. Quinine — usual doses; two grammes in a draught of 180 grammes (six ounces) to be taken; table-spoonful every hour. Cervix not open. The placenta is expelled after seven hours. I might record many other cases in which quinine succeeded in arresting a uterine hæmorrhage, or in expelling placental remains, when used from the beginning, or after other agents failed. But these will be sufficient for demonstrating the value of this remedy. In all these cases, except case VII., where I made intra-uterine injections, since the placenta being attached near the cervix the quinine could not act well, the quinine was used alone, and in some cases after the failure of other drugs; the patient, of course, being in the dorsal decubita, with the head low.

In conclusion, I do not intend, by any means, to discard the curette, the intra-uterine injections, etc., and the *écouvillon* (ramrod-screw) of Doleris, which I am looking for an opportunity of trying in such cases, as it gives good results in some kinds of metritis. But however harmless may be the surgical intra-uterine interference, made with all the antiseptic precautions, I think the remedy, quinine, must be still more harmless, and in most cases one may rely upon it with confidence, as my experience proves.

Thus, having on one hand *sulphate* (or bromhydrate) of quinine¹ to expel the uterine contents when we deem it necessary to evacuate the womb, on the other hand *Viburnum prunifolium*,² which was, I think, introduced by your distinguished President, Dr. Jenks, for stopping the miscarriage, whenever it is not too far advanced, we have two great weapons for success in that dangerous situation, in which so many women may lose their life,—abortion.

About *Viburnum prunifolium* I may, when I have made observations, make another communication to the Society, if the members allow me to do so.

PARAMETRITIS.

BY DR. A. W. IMRIE, M.D., DETROIT.

Read before the Detroit Gynecological Society.

Title.—The subject of this sketch has been chosen, not so much because there is anything new to be offered at this time upon so important a topic, as to elicit from the Society an expression of opinion.

Importance.—There is perhaps no other disease of the female pelvic organs, fraught with graver dangers to the after well-being of the subject of it, than pelvic cellulitis; and its early recognition and intelligent treatment will do much to thwart them.

Definition.—By the term “Parametritis” we are to understand an inflammation of the connective tissue under the peritoneum of the pelvis wherever that tissue exists. Though usually associated with inflammation of other tissues in this region, the name is to be restricted to those cases of inflammation in which the action predominates in the cellular structures from the outset. Connective tissue is chiefly abundant in those parts of the pelvis where protection is most required for the important nerves, blood-vessels, and lymphatics; viz., at the sides of the uterus and extending out between the folds of the broad ligaments to the under surface of the ovaries and Fallopian tubes, in the utero-vesical space, the roof of the vagina, and utero-sacral ligaments. It is in these localities that cellulitis chiefly exists, and it is probably always accompanied by phlebitis and lymphangitis, and very often by inflammation of the adjacent peritoneum.

Causes.—It is essentially a disease connected with parturition, the injuries inflicted upon the soft parts, notably laceration of the cervix uteri, being its principal cause. It is frequent after abortions, and may follow any operation on or injury of the vagina or uterine cervix or cavity, peri-

¹ The utero-tonic.

² The utero-oxidative.

neum, or rectum. So slight an irritation as that which attends the introduction of a uterine sound, even in skilled hands, may, in certain predisposed subjects, give rise to it; again, it may result from the application of caustics to the os uteri, or possibly from gonorrhœa — though pelvic peritonitis is the rule from this source. It probably never occurs before puberty, and rarely ever in the virgin; though, in certain low states of the system, it may be induced by over-fatigue or exposure at the menstrual period, or by dysmenorrhœa or the retention of a pessary. In producing so serious a disease from such slight irritation as appears sometimes to cause it, it is probable that not only the venous, but also the lymphatic and nervous systems have to do.

Course. — Parametritis begins most frequently in one of the broad ligaments near the side of the uterus, as here the connective tissue is most abundant, and the tissues in this region are those most likely to be injured in the act of parturition. When the disease follows childbirth, laceration of the cervix uteri is almost invariably present, and the tear is upon the same side as the cellulitis.

Once lighted up, the inflammation may become circumscribed, and remain localized throughout; or, as more often occurs, extend to many or all the other situations in which connective tissue exists. From the first stage, which is one of active congestion, it rapidly passes into that of serous infiltration; during which a large amount of highly albuminous material is poured out, rendering the tissues invaded dense and rigid. If not now arrested, in a few days suppuration takes place, and an abscess results, with very irregular resisting walls. Ultimately, if pointing does not occur in a position accessible to the surgeon, burrowing in various directions may result, the pus finding its way, by the line of least resistance, to the groin, saphenous opening, iliac fossa, obturator, or sacro-ischiatic foramina, or into the rectum, vagina, bladder, or peritoneum.

Symptoms. — *Pain* is usually the earliest symptom, and is of greater or less severity, according to the attack and the temperament of the individual. It is usually referred to one or other iliac fossa; but may be most intense at hypogastrium, or in sacral region. Sharp and lancinating in character, and increased by flexing or abducting the thighs, it is soon accompanied by a *chill*, and this is followed by a *fever*, general languor, and sometimes nausea, vomiting, and tympanites. *The fever*, which does not run very high, as a rule, is irregular, and highest towards night. *The pulse* is soft, full, and rapid, unless there be peritonitis present, when it may be small and firm. *The tongue* is usually coated, and the bowels constipated, or there may be pain in defecation and micturition. After three or four days, if resolution occur, these symptoms are ameliorated, and the

skin, which has been dry and harsh, becomes soft and moist; or, if the disease go on to suppuration, the irritative fever and chills are kept up, and profuse and exhausting sweats ensue.

Physical Signs. — The abdomen is, as a rule, rather tense; and pressure over the site of pain elicits marked tenderness. Later on, by bimanual palpation the induration may be determined.

Per Vaginam. — In the early stage, beyond heat and tenderness, nothing may be discovered; but later on there is rigidity, and very marked tenderness to touch, limited to one side of, or in front of, or quite surrounding the uterus. This induration increases for a day or two, and then the thickening becomes doughy, and may be free from, or attached to, the uterus; which is itself usually quite immovable. Now, either absorption and resolution occurs, the pain and thickening gradually disappearing, or suppuration supervenes.

Diagnosis. — Pelvic hæmatocele and pelvic peritonitis are the conditions which most closely simulate parametritis. In the former the symptoms are usually sudden, and there is a history of hæmorrhage, with signs of loss of blood, such as pallor, coldness of the surface, and perhaps syncope. The resulting tumor is harder, better defined, and grows harder and less painful. In *pelvic peritonitis* there is no tumor noticeable for some days, perhaps not at all. There is more general abdominal tenderness and tympanites, and nausea and vomiting are marked symptoms. The other conditions, which may be confounded with pelvic cellulitis, are perityphlitis and dermoid, or suppurating parovarian cysts.

Prognosis. — The disease is seldom fatal; but, as a rule, where suppuration occurs, troublesome, and never unattended with danger. There is apt to be more or less permanent injury inflicted on the pelvic viscera; and, after all evidences of the disease have subsided, residual abscess may result from apparently slight causes months afterwards.

Treatment. — To secure rest and mitigate the pain, large doses of opium, preferably by suppository, and, if the initial fever be high, combined with full doses of quinine (which lowers the temperature and checks the migration of leucocytes), are indicated. If the skin be very dry and hot, diaphoretics, as solution of the acetate of ammonia, combined, if bowels be constipated and there be no peritoneal complication, with mild salines, will be found useful. As a rule, opium is the only remedy to be given internally for at least the first week.

Locally, hot poultices, or, if tympanites be present, hot turpentine stupes, to be frequently changed, should be applied over lower abdomen. Hot water vaginal irrigation two or three times in twenty-four hours for twenty to thirty minutes at a time, and followed, in later stages, by a hot

solution of boric acid (3ij to Oj) will be found to add greatly to patient's comfort, and prove of decided benefit in tending to reduce congestion, limit the disease, and favor resolution. As the acute symptoms subside, tincture of iodine, or, if this be too irritant, equal parts mercurial ointment and the solid extract of belladonna, applied to seat of pain, under poultice, will do good. Iodide of potassium and quinine may be administered now, to further promote absorption; or Tilt's combination of the chlorides of arsenic, mercury, and iron, with dilute muriatic acid. Throughout, the food should be easily digested and concentrated, and to relieve thirst and nausea, cool drinks, bits of ice, and aerated waters, with milk, will be useful.

Treatment of Abscess. — When from the symptoms it is evident that suppuration has occurred, rest and hot poultices and hot douches should be continued, and a close watch kept for signs of pointing by digital examination, testing the relative softness of the exudation, as felt through vagina or in the direction of the groin. When pointing does occur the pus should be given free exit by an incision and drainage-tube, if in groin, and by the same means if pointing is felt through the vagina, unless the collection be quite circumscribed, when the aspirator may be used; but, if there be likelihood of sinuses existing, it should not be trusted to. The abscess cavity should be washed out with a mild, stimulating, disinfectant solution, as of iodine; and, if the opening has occurred in the vagina, a suppository of iodoform should be kept in that canal; or a dressing of iodoform gauze applied to the wound if the opening be external.

DETROIT GYNÆCOLOGICAL SOCIETY.

STATED MEETING, FEB. 1, 1888. — (*Concluded.*)

AN interesting communication on "Quinine as an Oxytocic," by Dr. A. CORDES, of Geneva, Switzerland, was then read by the Secretary. See page 375.

Discussion.

Dr. WARNER was surprised that any one should have such great confidence in the effect of quinine on pregnant women. She had used it extensively, but had never noticed the results noticed by the author of the paper.

Dr. LONGYEAR remarked that he had had experience with quinine in accelerating labor pains. He had never used it in cases of abortion, but he thought it possible in the large doses given it might be useful. When he (Dr. Longyear) is called to a case of severe flooding, he does not care to wait.

Dr. HUTTON hoped that the use of quinine would prove as successful in our hands as it had in those of Dr. Cordes. He would like to ask whether, when there are portions of placenta retained with more or less hemorrhage, if the pieces do not undergo some nutritive change. He (Dr. Hutton) had removed pieces some months after labor, which seemed altogether too large for placenta remains.

Dr. WILSON said that he had always thought quinine to act in the manner mentioned in the paper, but he had never relied upon its administration alone.

Dr. GILLET said that it would seem if quinine had such a powerful oxytocic action, it would be unsafe to give it to pregnant women as we do. He had made it a practice to give it to pregnant women with ergot.

Dr. MURIN had used it in labor cases when there was inertia uteri, ten to fifteen grains at a dose, and also to expel retained placenta, in connection with other remedies, and had always found it a reliable agent.

Dr. MAIRE thought it was an accepted rule that quinine had no action on the quiet uterus, but only exhibited its effect on a contracting womb. He (Dr. Maire) had used the drug, and noted the effect; in many cases it had no effect; in others ten to fifteen grains would produce normal contractions at intervals. This is unlike ergot, which results in permanent contraction.

Dr. JENKS had given quinine in many cases of childbirth to accelerate labor. The drug will produce an increased flow in some menstruating women, and in some cases of uterine congestion its use results in positive harm.

A vote of thanks was moved by Dr. LONGYEAR to Drs. Jackson and Cordes for their interesting communications.

Exhibition of Instruments.

Dr. JENKS showed Darrow's self-retaining speculum; also Jenks' cervical needle, perineorrhaphy scissors and knife.

HOSPITAL REPORTS

TWO CASES PAPILLOMATOUS CYST. — MURDOCK FREE SURGICAL HOSPITAL FOR WOMEN. — SERVICE OF DR. E. W. CUSHING. — REPORTED BY P. L. BURT, M.D., HOUSE SURGEON.

CASE I. — *Papillomatous Cyst of R. Broad Ligament.* — Mrs. D. is a widow, 35 years of age, and has one child, aged 10. She presented herself at the hospital for diagnosis, and was admitted for operation Jan. 24, 1888. She had always been very healthy, and had for several years been doing the work of a domestic, never suffering at all till the beginning of her present sickness. Menses at 14 years 4 months; last appearance, present month. Duration of flow, three to seven days, quite regular, and never attended by any pain.

Present trouble began eight months ago, the symptoms complained

of being a constant aching. This was mostly located in the pelvis, but at times would seem to leave this location and go to the back or stomach.

Most of this time there has been irritation of the bladder, with frequent urination, and patient has been obliged to get up nights because of this.

Two months ago she had what was called a bilious attack, with vomiting and purging, because of which her strength was very much reduced. Leucorrhœa has been a constant source of annoyance for the last six months. Examination shows a woman tall and naturally slender, but somewhat emaciated, and with an appearance of suffering. Palpation of the abdomen gave evidence of a mass in the upper pelvis, slightly to the right side, which bimanually, one hand being in the vagina, seemed to be about seven inches in diameter, and with the characteristics of a cyst.

She remained in the hospital, waiting her turn and becoming prepared, until February 13, during which time she had another bilious attack, with vomiting and purging, causing considerable weakness. This was at time of menstruation, January 31 to February 5. Following this the tumor seemed to diminish in size, due to the very thorough evacuation, and was with more difficulty made out. February 13, laparotomy. Abdominal walls were very thin, and the incision quickly reached the peritoneum, under which appeared a mass which was extremely vascular and very dark in color. This looked not unlike a placenta at the point of attachment of membranes. On incision of peritoneum this was found to be omentum; it was from three to four times the normal thickness, and appeared as though in a gangrenous condition. During the operation the irritation of the omentum caused bleeding at several points, sufficient to cause trouble if left in this condition. These points could not be picked up and ligatured on account of the softness of the tissue; consequently, a portion about 6 in. \times 8 in. was sutured off with the shoemaker stitch, and removed. This part gave no further trouble. On pushing aside the bowels, the cyst appeared. This was tapped, and a thin, very dark fluid escaped. In puncturing, the trocar passed through the opposite wall of the cyst, while trying to grasp the sac. Considerable fluid thus escaped into the abdominal cavity. The lower portion and sides of the sac inside were covered with papillomatous tissue. Some of this tissue escaped into the peritoneal cavity. The sac attached to the right broad ligament was removed, together with the right ovary and tube, by being sutured off with the shoemaker stitch. The peritoneal cavity was then thoroughly washed out with a very weak solution of boracic acid as hot as considered safe to tissues. This was kept up till it came away per-

fectly clear. Abdominal walls were now brought together with catgut, and collodion applied externally. Perfect recovery and no bad symptoms followed.

CASE II. — *Multiple Papillomatous Cyst.* — Mrs. Y is 29 years of age, was married at 17, and has one daughter, 11 years old. There have been several abortions, number unknown, since this birth. The condition of the patient up to three years ago is unknown, but during this period she has complained of pain and bloating of the bowels, which has been gradually growing worse. The middle of February, 1887, she came down with typhoid fever. At this time there was great increase of pain and tenderness in the lower part of her abdomen, simulating peritonitis, and after a week of sickness she was taken to a hospital in Massachusetts, where she recovered from the febrile symptoms, and was taken into a surgical ward for examination. A fluid tumor was diagnosed, with something of a more solid character at its base. A fluctuating mass descended into the pelvis, back of the uterus and Douglas' cul-de-sac, while another roundish fluctuating mass was felt to the right of and below the umbilicus. This was the diagnosis made, as I learned it from her physician, and it is essentially what the condition was after entrance here. She left the hospital, after treatment and rest of six or seven weeks, greatly improved. Soon she began to decline again; the enlargement increased; the bowels became more constipated, and her general health showed that the abdominal trouble was breaking her down. Seeing no hope for her except by an operation, she was advised to go into the Murdock Hospital, which she entered.

Laparotomy, Aug. 14, 1887. Adhesions were found in all directions. The mass on the right proved to be a cyst, and was tapped. Another cystic mass, more to the left and behind, was also tapped. A third mass descended behind the uterus, completely filling the pelvis, and this mass was ruptured in efforts to detach it, the fluid discharged being milky, purulent, looking like that of the other two cysts. At length the adhesions were all broken up, and the mass, including the fundus of the uterus, was sutured off with the shoemaker stitch, at about the point of the internal os. A glass drainage-tube was inserted and the pedicle dropped. The cysts were of the papillomatous variety, and the solid growths were intimately attached to the sides and posterior aspect of the uterus, having grown between the folds of the broad ligament. Patient rallied from the operation, and seemed to do well till the fourth day, when signs of septicæmia developed, and she died after seventy-nine hours. The autopsy showed that there had been no hemorrhage nor formation of pus.

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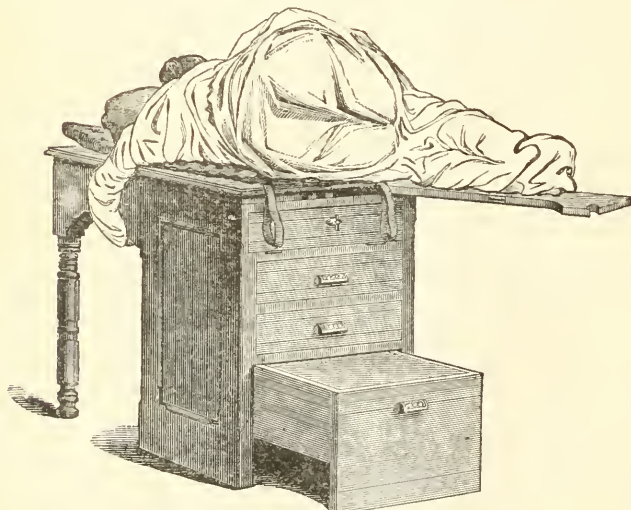
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A MONTHLY REVIEW

GYNÆCOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY.

EDITED BY
E. W. CUSHING, M.D.,
BOSTON.

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JUNE, 1888.

CONTENTS:

	PAGE		PAGE
LEIST CONCLUSIVE CASES OF ACUTE PERITONITIS TREATED BY ABDOMINAL SECTION AND DECAPSULE.		OBSTETRICAL SOCIETY OF PHILADELPHIA.	407
<i>Prof. L. Leiber Tait.</i>	37	MEETING OF THE AMERICAN MEDICAL ASSOCIATION.	421
ON THE EXTERNAL TREATMENT OF DISEASE OF THE UTERUS.		DETROIT GYNÆCOLOGICAL SOCIETY.	467
<i>T. Spencer Wells, M.D.</i>	31	A SYSTEM OF FREE SPINAL ANÆSTHESIA.	
THE NON-SURGICAL TREATMENT OF GYNÆCOLOGICAL CASES.		IN PHILADELPHIA.	
<i>Horatio R. Bagley, M.D.</i>	49	<i>Joseph Price, M.D.</i>	46
SMALL-POX MATRONS.		HOSPITAL REPORT.	48
<i>George A. Tye</i>	47	REVIEW.	50

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Fig. 13.



Fig. 14.



Fig. 15.



Fig 16



INCIPIENT CANCER OF THE CERVIX UTERI.

EXPLANATION OF PLATES.

FIG. 13 (25 x) is from case N. H., mentioned in the foregoing paper. Here the age, clinical history, and gross appearances all indicated an incipient cancer; and the diseased tissue, with a wide margin of healthy vaginal portion, was freely excised. There has been no return now in nearly a year.

The figure shows on the right the free edge of the section, which was made perpendicular to the margin of the os externum. The epithelial covering is gone; the ragged surface is covered with papillary outgrowths. These, with the tissue under them, are so thickly crowded with small cells that they appear black and opaque, since the nuclei of the newly-formed cells take the color strongly and prevent the light from passing through. The loss of the epithelial layer is here not post-mortem, as the portion excised was put immediately into Müller's fluid. To the left of the densely infiltrated border, that is, below the abraded surface, the tissue is seen to be studded with glands lined with cylindrical epithelium. These are in a state of great activity, and the heavy dark lines bounding them indicate the rapid cell-formation on their surfaces. At *A* is a deep cleft bordered by these newly-formed glands. This is seen enlarged in the next figure.

At *B* and all along the left of the field is normal uterine tissue. No cancer pegs anywhere.

Fig. 14 (150 x) shows the cleft in the tissues, seen in the last figure at *A*. It is lined in its upper half with ciliated epithelium, beneath, and in some places replacing, which is a dense infiltration of small cells, making the picture look thick and black.

There is no such lining of the lower half of the cleft here; the open space probably represents a rent in the tissues, the sides of which are sundered by shrinking in alcohol. The same shrinking will account for most of the free space in the upper half of the cleft.

This, then, would represent one great gland with numerous branches which are growing rapidly in either direction from the main trunk.

These glandular branches are lined with cylindrical epithelium, and in some the lumen is indicated, as in those opposite *A*, *B*, and *C*, and the upper half of *D*. In most of the sprouts, however, no lumen is visible; and this may be explained in two ways, either by the section running in one wall of a hollow sprout, or by the fact that the sprout buds out into the tissues as a solid mass of cells, and becomes hollow as it gets older and larger. I am convinced that although the first explanation may account for the appearances in some sections, as in the gland opposite *C*, and in Fig. 15, yet the second explanation is true as concerning the mode of growth of rapidly-forming new glands, as seen at *D*, *E*, *F*, and in Fig. 16. The subjacent uterine

tissue of the vaginal portion is seen in the upper part of the picture to be darker and infiltrated with round-cell nuclei, while in the lower part of the field it is normal.

Fig. 15 (450 x) shows the glandular branch seen at *C*, in Fig. 14. Below the open lumen the ciliated columnar lining is shown very clearly. Over *A*, *B* can be seen the dark nuclei occupying the lower half of each cell. To the right, as far as the space over *C*, the nuclei are shorter and more irregular, corresponding to an infiltration of cells of another and rounder form, apparently due to a rapid proliferation of the cylindrical epithelium, or to a change similar to that seen in Fig. 8.

Higher up, opposite *D*, the section runs obliquely through the cylindrical epithelium lining the wall of the gland, which here makes a turn, and correspondingly the cross-sections of the cells are seen in various degrees of foreshortening. In the middle, on the level of *D* and above *B*, the cells have an appearance like pavement epithelium, which they clearly are not; and it is also of importance not to confound them with cancer cells, nor to attribute to them any particular significance which they do not possess. The border of this gland on the right is darker, from intense staining of the cell nuclei. By comparing the different parts of this figure with the corresponding places in Figs. 14 and 13, a correct idea may be formed of the significance of the dark lines and patches in the latter figures, which represent, in general, dense aggregations of highly-stained nuclei of newly-formed cells.

Fig. 16 (300 x), from another section of the same specimen, shows the above-mentioned mode of growth of the glandular sprouts as solid processes, at *A* and *B*, less clearly at *C* and *D*. The clubbed end of the large gland opposite *E* shows divisions, and in these an apparent filling up with cells, which I understand, however, as a stage of the process of becoming hollow in sprouts previously solid, and not the reverse. The uterine tissue in which these sprouts lie is normal.

Nowhere, then, in this most interesting specimen is there any microscopical evidence of cancer, and yet the case had been pronounced to be such by very able and competent men, and certainly coincided clinically in every respect with other cases which finally develop into undoubted cancer.

The microscopical appearance to which I attach the greatest importance is the complete loss of any kind of epithelial covering and the small cell infiltration.

Certainly in such cases of bleeding erosions in women of fifty or over a free excision of the diseased parts is indicated as soon as the disease is discovered. Weeks are precious. If we may ever speak of a pre-cancerous stage, this is it; or, rather let us say the disease is now purely local and superficial and may easily be wholly removed. The operation is a trifle; the danger of delay is terrible.

E. W. C.

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No. 9.

ORIGINAL COMMUNICATIONS.

A SERIES OF EIGHT CONSECUTIVE CASES OF ACUTE PERITONITIS TREATED BY ABDOMINAL SECTION AND DRAINAGE.¹

BY LAWSON TAIT, F.R.C.S.,

Professor of Gynæcology in Queen's College, Birmingham, etc.

THE amazing progress made in abdominal surgery must be satisfactory to all concerned; and though that progress has been made through a succession of angry quarrels, these are not to be regretted, for without something of this kind progress would be impossible. I have been interested in a number of these, and I do not regret one word that has been said about myself, the opinions I have advanced, or the work I have done; nor do I regret any reply that I have made. There is no man who is in earnest who will not use strong language, and, whether right or wrong, I have always held my convictions with earnestness, and I have, therefore, so expressed them.

The results of some of these *polemics* are already established beyond cavil, as was proved in the case of tapping ovarian and parovarian tumors, — a practice which has been ended, wherever our influence has extended, by the strong condemnation expressed concerning it, by Bantock and myself. The enormously diminished mortality of the so-called ovariotomy is to be credited very largely to the acceptance of our views by those who have primary charge of these cases, — the family medical attendants, — and I say it with an emphasis which is most satisfactory, that it is now seven years since I have had to operate on an ovarian or parovarian tumor, which has been tapped by a practitioner, within what we recognize as the Birmingham consulting district. The few that I have had thus injudiciously interfered with have come from outlying districts, to which our Midland doctrines have hardly yet *permeated*.

¹ Read before the Midland Medical Society, March 21, 1888.

The conclusion thus arrived at is establishing beyond all cavil that early operations are the successful operations; whilst the cases that are delayed and tinkered with are those which are apt to be fatal.

Having thus been led by success in early ovariectomies to an utter disbelief in the terror of the *peritonæum*, which existed in the minds of our predecessors, advances in other directions were a natural sequence, and in none has this been more decided than in dealing with cases of most inflammatory conditions within the abdomen, and conditions of obstruction of the intestines.

That my story may be borne more emphatically in mind, let me begin in each case with the narration of a *ghastly picture*, for nothing teaches so well the road to success, and then I may touch up the pictures by placing in the high lights of success.

Some months ago I got an urgent summons to a distance to see a lady who, as the telegram informed me, was suffering from peritonitis after labor. I shall not indicate in any way the place where the case occurred, nor the gentlemen who were responsible for it, for I have reason to know that they bitterly regret the story I have to tell, and I see no reason for adding to their distress concerning it. Suffice it to say that the case involved for me a journey of over three hundred and fifty miles.

I went off as usual armed completely for operative interference, and I found a patient who had been confined eight days, after an instrumental labor of her fourth child. She was quite in the moribund state of acute peritonitis.

The practitioner originally in charge of the case had found an obstruction to the passage of the head, and after several *ineffectual* efforts to deliver the patient by the forceps, he obtained the assistance of first one and then two of his neighbors. They made out that a tumor was presenting in front of the head, and after many efforts to bring the head past it, they unfortunately determined to puncture it from the rectum. This, their second mistake, was successful. They got away about a pint of clear fluid, and then delivered the patient without difficulty. She went on all right for four days, and then developed symptoms of peritonitis. The third mistake, worse than the others, was that they *tinkered* with the case in many ways for four days and then determined to send for me. When I arrived there was no difficulty in determining that they had punctured a small pelvic cyst, that that cyst had suppurated, was probably *discharging into the peritonæum*, and was rapidly thus carrying the patient to her grave. I advised immediate abdominal section, though, as I could not count the patient's pulse, I had little hope of saving her. When the abdomen was opened, about three pints of abominably putrid

pus escaped, and I found a small gangrenous parovarian cyst to be the source of all the trouble. I removed it, but the patient succumbed in six hours.

The mistake of the case for me is that I have to reckon this terrible case as an unsuccessful ovariectomy, a result which I think very injurious to my statistical accounts.

The first mistake in this case was of course that the patient was not completely *anæsthetized* in her labor, the head pressed well back, and the tumor slipped up past it. Had this been done, — and there could have been little or no difficulty about it, — the tumor could have been left to be dealt with after the patient's puerperal convalescence. The second mistake, to tap the tumor from the rectum, was a step which almost of necessity insured its suppuration, for I never knew a pelvic tumor thus treated which did not suppurate, and I regard it as a method of treatment wholly *indéfensible*. Tapping from the vagina is, under certain circumstances, permissible; and if this tumor could not have been passed up beyond the head, this proceeding might have been justified, though it would have been far safer to have explored from *outside* and removed the tumor thus, as could easily have been done.

And with the knowledge which the tapping had given them, it was a most mistaken policy on the part of those responsible for this case to stand by and see peritonitis begin on the fourth day and run another four days' course before operative interference was ever suggested. Yet this is what is happening in a large proportion of deaths from peritonitis in the puerperal condition. I am more and more persuaded that a very large number of the cases of so-called puerperal fever have a purely local origin; as my experience grows, so does my belief grow that this proportion is far larger than we have any idea of. That such cases could be dealt with successfully, even when they appear desperate, by surgical interference, has been proved to me over and over again.

That there are, on the other hand, a large number of cases where there can be no doubt that there is a general systematic infection, is forced on me by many deplorable examples. But even then the local expression of a large peritoneal abscess calls aloud for surgical interference, just as much as if the trouble centred in a knee-joint. In my experience the worst and most hopeless of these cases have been in first labors, and I am certain that the *obstetricians* must begin to reconsider this complex question from a new aspect altogether, by careful post-mortem examination in every case, — a practice altogether too infrequent. Cases must not be *stamped* together as "puerperal fever," or "peritonitis after labor," and buried without a more accurate knowledge of their real disease. The question of the influence of first labors in the frequency and method of

the production of death must also be most carefully considered, for we know how strongly it influences unfortunate occurrences in other directions. I have operated on an enormous number of cases of ruptured perineum, many hundreds, and I do not remember more than three which occurred in other than first labors. I have also operated in a very large number of cases of vesico-vaginal fistula, and in all but two the damage was in first labors. Before I restricted my practice exclusively to gynecology I was called in to a number of cases of puerperal eclampsia, — and even yet I see a case occasionally, — and in all but three (the total number that I have seen is certainly over thirty) the patients were *primiparous*.

First labors have, therefore, a terribly lethal significance, — a fact which can be new to none of my hearers. But I wish to put a new inference upon it, to the effect that, when a *primiparous* woman develops symptoms of peritonitis, her chances, if left alone, are bad. No known method of treatment yet in general employment gives her a good result. The mere opening of the abdomen and draining it has little or no risk, and the early exit of a small collection of *purulent serum* may help us immensely in reducing the fatal results; *but if it is to be of use it must be early*.

Thus, I was called in February to a young woman who had been confined of her first child eight days before. For a few days she went on well, but on the fourth day she developed the initial symptoms of peritonitis, and, when I saw her, her condition was most serious. I advised immediate abdominal section, and evacuated about three pints of stinking purulent serum.

For twenty-four hours the relief was so remarkable that we thought we should have a triumph to register; but it was not to be, and she went the way of all flesh.

The subject is one of course open to dispute, but it can never be settled save by an empirical trial of my question, “If we could have opened the abdomen in this case on the second day instead of the fourth, should we have saved her?” The results of surgical interference in peritonitis which is not puerperal are so satisfactory, the results of it in cases even when occurring in the puerperal condition, but due to a recognizable and removable cause so brilliant, that I have a strong *a priori* case to offer in favor of my proposal. The only terror is this awful idiosyncrasy of the *primiparous* woman; but may it not be that she is all the more in need of our prompt assistance, and in need of it in the very earliest stage of her disaster? I am disposed to answer the question in the affirmative, and to plead urgently on behalf of prompt abdominal section, cleansing, and draining in these disastrous cases.

I am disposed here to give a case in which a possible *source* of some

of these cases is clearly indicated, as another argument. Nögerrath and Sinclair have abundantly proved the terrible influence of gonorrhœa in women, and my own work has established their conclusions. We are beginning to suspect that we are only on the threshold of another and even more terrible revelation, to the effect that some of those fatal cases of *primiparous* puerperal peritonitis are the result of latent gonorrhœa. Certainly my next case is most singularly suggestive of it.

Early in January I saw a young woman from Hereford suffering from gonorrhœa, and in the course of a month the disease spread into the pelvis, and there were all the symptoms of sub-acute general peritonitis. She had not menstruated for nearly three months, the floor of the pelvis was filled by a *uniform* boggy swelling, which spread in all directions from the cervix, that prominence being firmly fixed in the centre of it. There was every reason to believe she was pregnant, but the difficulty as to whether it was a normal pregnancy with peritonitis, or a ruptured tubal pregnancy, could not be solved. I advised immediate abdominal section, and this was carried out with the result of displaying the fact that she was suffering from *purulent* peritonitis, and had a normal pregnancy of about the third month. I cleaned the peritoneal cavity out, drained it, and in ten days she was quite well. The strange thing is that she not only did not miscarry, but that the pregnancy is now clearly advancing. She has got married, and is now, I trust, on the road to social as well as surgical success. I have no doubt the peritonitis was gonorrhœal, but how it passed over a pregnant uterus without emptying it I cannot imagine.

On July 15, late at night, Mr. Hallwright called me to an urgent case, the wife of a tramway conductor suffering from what he and his partner regarded as a ruptured Fallopian pregnancy. His message was to the effect that if anything was to be done it must be done at once, and, therefore, I went off prepared, and telegraphed to him that I was coming. When I got to the patient I found that there was no doubt that she was pregnant, but I thought the pregnancy a normal one, about the fifth month, and that the symptoms were due to acute peritonitis. In any case, we agreed as to the advisability of opening the abdomen, and this I did at once, giving exit to a large quantity of *purulent serum*, smelling very badly. I found the uterus contained a normal pregnancy of about the fifth month. I passed a long drainage-tube down behind the uterus. On the fifth day the temperature and pulse had fallen to normal, and there was nothing coming out of the tube. It was therefore removed; and the patient was quite convalescent on the 26th of July. Her pregnancy went on uninterrupted, and terminated, in September, by a natural labor with a living child, under the superintendence of Mr. Gordon Nicholls.

On March 17, Dr. Watters, of Stoneham, telegraphed that he was bringing an acute case to me, and that I was to be prepared for immediate operation. When Dr. Watters arrived with his patient, she proved to be a strong-looking young woman, in whom the symptoms of acute peritonitis had been developing for about four days, and Dr. Watters had seen her for the first time the day he brought her over that long distance. I must say that I admire greatly his pluck and decision in thus acting promptly, even more than the skill and completeness of his diagnosis. I have had the good fortune to be frequently associated with him, and these qualities I have never found wanting. His example in thus, at the earliest possible moment, giving me a chance of victory over a fatal disease, is one to be strongly urged as worthy of imitation, and the brilliantly successful issue of the case justified his action. It also has completely shaken the traditional fear I had hitherto been possessed with, that these cases would be risked by moving them. The girl was no worse after the journey than before it, and we had a control over the progress of the case that would have been impossible in a cottage at Stoneham.

A detailed diagnosis of the case was impossible, but that the girl was suffering from acute suppurative peritonitis was beyond doubt. I opened the abdomen immediately and found the pelvis full of broken-down *purulent hydatids*. I cleaned them thoroughly out, and drained. She made an easy, uninterrupted recovery, and went home perfectly well within the month, and she has continued to improve ever since.

On February 27 I saw A. P., with Mr. Lamsford Clay, my friend and assistant, Dr. Rocketts, having seen her, in my absence, the previous day. The symptoms were such that Mr. Clay, Dr. Rocketts, and myself were all under the belief that she was suffering from gall-stone colic. Her vomiting was incessant and her pain excruciating, and it was referred, specifically, to the region of the gall-bladder. There was no very remarkable abdominal distension, and the temperature and pulse were not remarkably high. I opened the abdomen, fully expecting to find a gall-stone; but I did not. Instead of that I found the intestines everywhere adherent with recent lymph, but very little fluid effusion. I put in a drainage-tube, and for about three days the amount of draining was fairly abundant. The symptoms slowly subsided, and her convalescence was complete on the 15th of March. Probably there was some cause for the peritonitis not revealed by the exploration, but it is remarkable that little more than an incision into the peritoneal cavity seemed to save this woman, for there is no doubt in my mind that another forty-eight hours would have ended her life as she was when I saw her.

On February 28 Dr. Watters sent me a young girl, F. W., aged 17,

extremely anæmic, in great abdominal pain, and looking so ill that when removed from the cot in which she came I thought she had not many hours to live. She had been ill for three weeks, but had only lately called Dr. Watters in. The abdomen was much distended and occupied by a quantity of fluid, the temperature and pulse were both extremely high; indeed, the latter was so irregular, quick, and feeble that I could not accurately record it. I immediately asked one of my physician colleagues to see the case and report as to whether it was not already too late to enter upon operative measures. Our united decision was in favor of proceeding, and therefore next morning I opened the abdomen, and gave exit to a large quantity of purulent effusion for which I could find no local cause. The girl was virginal, so that there was no reason to suspect gonorrhœa, and there was nothing the matter with the uterine appendages. I left a drainage-tube in the peritonæum for nearly a week, by which time temperature and pulse had become nearly normal. She is now getting about, and no one who sees her could recognize in her the apparently dying woman admitted exactly three weeks ago.

On December 5 Dr. Penrose, of Wingmoreford, called me to see a lady who had begun to be ill fourteen days before. When I saw her the symptoms were urgent, the pains being incessant and preventing her extending her limbs. There was great abdominal tenderness, but no great distension, and both pulse and temperature were high. Pelvic examination did not give any very clear *indication*, though I thought I could feel both tubes enlarged. The symptoms were so urgent, and had advanced so rapidly within a few days, that my proposal to open the abdomen was at once accepted, and I found advanced pelvic peritonitis, with *purulent condition* of both tubes. This was removed, the pelvis sponged out and drained. She was soon relieved of all pain, and made a very rapid recovery.

We have here, then, a series of eight cases of acute peritonitis of all kinds treated by abdominal section, with six recoveries. Two of these recoveries were made for a time doubtful by previous delay, and one of the deaths was due solely to this cause. The other, the *primiparous* death, I am not so clear about delay being a feature. I mean that earlier operation might not have saved her, but seeing the splendid results in the other cases, I am inclined to hope that earlier operation will save even these dreadful cases. At least, late operations will not save them, and nothing else does. Let us, therefore, plead for early intervention, and see if we cannot save a number of those unfortunate *primiparæ* by opening and draining the peritoneal cavity as soon as it is evident that it is the seat of inflammatory mischief.

ON THE ELECTRICAL TREATMENT OF DISEASE OF THE UTERUS.¹

BY SIR T. SPENCER WELLS, BART., F.R.C.S.

I HAVE had perhaps a longer and more varied experience than most men in dealing with uterine diseases, especially those which are characterized by overgrowth. I have so constantly had to regret the inefficacy of medical treatment, and the results of surgical operations, though sometimes brilliant, have often come so short of my desires, that I have, for many years past, fallen into a frame of mind readily disposed to listen to any suggestion of a mode of treatment which offered a reasonable chance of success, and avoided the risks and perils attending bolder practice.

So when reports reached me from Paris of what Dr. Apostoli was teaching and doing, they came with a welcome ring. Electro-therapeutics were no novelty to me. More than thirty years ago I had put galvanism to the test, and had gathered in various ways evidence of its potency both in destroying and repairing tissues. What I had learned of the treatment of ulcers by galvanism was published, in 1849, by Golding-Bird, and may still be read in an appendix to his book; but his son and Mr. Nunn are the only surgeons, so far as I know, who have made much use of the practice. Not long afterwards I tried the galvanic stem pessaries of Simpson in amenorrhœa, and have used them until now with occasional good result. I knew also what Radford had done with galvanism in the treatment of uterine hæmorrhage, and what Simpson had taught us as to the influence of galvanism on uterine contraction in labor. I have repeatedly made use of the galvanic cautery in various ways, and have very often removed masses of epithelioma, or the cervix uteri itself, by a platinum wire heated by a battery and used as an *ecraseur*, with very satisfactory results. Quite recently, with Dr. Goddard, of Highbury, I removed a cervix uteri without the loss of one drop of blood. My attention was later on attracted to the electrical work of the French and Americans in reference to fibroid tumors of the uterus. This was so little satisfactory that it dropped out of notice. Our English experiments were not more encouraging, and surgical enterprise seemed destined to throw into the shade all less dazzling endeavors.

In the mean time, taking up the idea of the wonderful influence of galvanism upon the nutrition of tissues, Apostoli was unobtrusively

¹ Read before the Brighton and Sussex Medico-Chirurgical Society, May 3, 1888.

resolving the problem of its right application in the treatment of abnormal growths and exudations. His published observations were so interesting, and the reports of eye-witnesses were so confirmatory, that, in the autumn of 1886, I determined to see and judge for myself. I went to Paris, and was received frankly and cordially. Dr. Apostoli explained to me his views, and demonstrated his mode of procedure. He threw open the records of his daily practice, and gave me the opportunity of verifying his diagnosis and witnessing his treatment of the cases actually under his care. Besides this, he mustered for my inspection about sixty of the patients who had passed through his hands. I heard many of their histories in their own words, and could contrast for myself their actual condition of good health and activity with the symptoms reported in the early notes of their attendance, and the deformity represented in the plaster casts of their bodies, taken before the tumors had been influenced by the galvanic current. I spent many laborious hours in what I may say was a rigidly sceptical examination of the evidence before me, seeking for weak points in the system, and the resolution of theoretical objections.

The conviction was irresistible that, though the method might not have reached its point of perfection, the work, so far as it went, was good. If the women were not radically dispossessed of their tumors, they were symptomatically cured. Nothing but prejudice could have turned the back upon the facts; and it would have been unjust not to put the matter to further proof. This I have unhesitatingly done. If I have hitherto been silent, it was because I did not wish to prejudge the case. But I have not been inactive, for I wished that, if the utility of the method could be made as manifest here as elsewhere, it should be advocated impartially, and presented to the profession upon reasonable grounds.

The uterine diseases which come under Dr. Apostoli's care range through all degrees of fibroid development. He has to deal, as we all do, with simple cases of sub-involution, general hypertrophy of the organ, with metritic deposits all round, polypoid excrescences in the cavity, thickening, more or less irregular, of the walls, and sub-peritoneal outgrowths, expanding into abdominal tumors. Practically, all these cases group themselves into two classes: first, those which give no trouble and may be left alone; and, second, those which threaten health and life by loss of blood, or, by mechanically interfering with the organic functions, cause a multiform series of distressing symptoms.

In the treatment of these conditions, instead of scraping and cauterizing the cavity with a curette, or caustics, or fire, Apostoli does the same thing with a pole of the galvanic battery. We give ergot, or mercury, or iodine, or bromine in the hope of altering the nutrition of the

diseased mass; he sends a disintegrating current through it. We castrate to cut short a woman's sexual existence; he seeks to quiet down neurotic sensibility, and induce regularity of ovarian function. Where we proceed to a root and branch extermination he proposes a denutritive paralysis of the uterine substance. Time will show whether, and how far, he surpasses us in his results.

But the novelty, at present, is not so much in the fact of electricity being used, as in the mode of using it. Others have tried the same means, but not in the same way. Former methods were uncertain, dangerous, and insufficient. The point that Dr. Apostoli has arrived at is this: he has studied the effect that certain currents will produce; he measures the intensity of those currents, and he has found the means of safely directing them, of proper force, through the diseased tissues, to insure the partial, if not complete, disorganization of these tissues, with the desired coincident relief of suffering, and often with restoration of general health.

It is the continuous galvanic current which is generally brought into action. For this purpose the operator must be provided with an apparatus which will guarantee him an unfailing current of at least 250 milliamperes, or electro-therapeutic units. I may say, in passing, that it may probably be found convenient to speak of milliamperes as "*units*" of current strength, — 10, 20, or 60 milliamperes, for example, would be 10, 20, or 60 units. In practice at the hospital or the surgeon's residence a battery of Leclanché cells answers admirably. It is enduring and easily manageable. For work at the patient's home a portable battery of the bisulphate of mercury is convenient, but it requires great care and frequent renewal. An indispensable accessory is the galvanometer. With a fractional deviation, it gives a measure of the intensity of the current passing. The graduation should rise to 250 units, or milliamperes, though this intensity is rarely wanted. Before every operation the perfect working order of battery, galvanometer, and conducting wires should be ascertained. As it is a characteristic point in the Apostoli practice that the galvanic current should be carried either into the cavity of the uterus or into the substance of the tumor, appropriate sounds and trocars are essential. To avoid loss of power by action on the metal the sounds are made of platinum. For punctures with a negative current steel trocars are equally good, but when it is intended to transmit a positive current a certain length of the sharp end of the trocar must be of gold. All that portion of the sounds and trocars passing through the vagina from the handle of the instruments to the mouth of the uterus or point of puncture must be insulated. Before every examination or operation the closest

attention should be given to antiseptic precautions, both as regards the patient, the operator, and the instruments. During the whole course of the treatment vaginal irrigations with sublimate or phenol are never to be neglected.

The labors of Apostoli have expanded and given a definiteness to our knowledge of the special power of galvanic currents in the treatment of uterine diseases, and of the mode of applying the current in a way which I may thus resume.

In the first place, we have learnt from him better to understand the double action of the uninterrupted continuous galvanic current. The one action is purely local, and coincident with the flow. The tissues immediately in contact with the pole which delivers it are decomposed. The bases and acids of the substances and fluids acted upon are set free; and, according to their nature, produce cauterization of the surrounding parts, independent of any thermic influence. This effect is local, immediate, and visible. The second action is due to the interpolar passage of the current. It is a *trophic* action influencing the nerves, vessels, and lymphatics, followed by molecular changes so as to modify the nutrition of the tissues through which the current goes, and varying according to the pole employed. The effect of the direct and of the secondary counter current is durable; and, whatever may be our interpretation of it, it is remedially of far more importance than the mere galvano-chemical cauterization.

Secondly, though the coagulating power of the current passing from the positive pole was known from the writings of Ciniselli and A. Tripiier, we have had disclosed much more since as to the distinctive character of the action of the currents from the two opposite poles. It was with the positive current that Apostoli began his attack upon uterine fibroids, because of the more striking nature of the hæmorrhagic symptoms, and it was the speedy relief of this grave trouble by the production of a hard, dry eschar and resisting cicatrix which encouraged him to persevere. The eschar resulting from the alkaline caustic action of the negative pole is just the contrary, softening and liquefying, and tending to promote discharge and hæmorrhage. Logically enough its dissolvent powers were applied to the opposite class of cases, where there was no hæmorrhage, and the object was rather to reduce the bulk and solidity of compact masses of fibroid material. Experience has proved this to be as good in practice as in principle. The positive pole is therefore designated as anti-hæmorrhagic or hæmostatic, while the words "hæmorrhagic or denu- tritive" are applied to the negative pole.

Thirdly, Apostoli has taught us a much more satisfactory way of

utilizing these currents in uterine disease. His predecessors had used currents which were generally uncalculated and ineffective. They were not often strong enough to do much good, yet at other times sufficient to bring about mischievous results. They were brought into play in an ill-judged fashion, and when used by means of punctures the punctures were made through parts which ought to have been left untouched. Now, the operation is performed under such control as to be a matter of measurable certainty. A strong and regular current is at command. By means of the galvanometer a knowledge of the exact intensity of the current employed is insured. The dosage can be regulated in proportion to the cauterizing and trophic effects considered necessary. A current of high intensity can be made to traverse the tissues inoffensively, and brought out through the abdominal integuments in a dispersed fashion, without more than a temporary blush, and made to complete the circuit through the cutaneous electrode imbedded in wet clay. Than this clay nothing as yet has been found more effectual. Then, by insisting upon the intra-uterine introduction of the current by means of the uterine sound, or its direct interstitial application through the inattackable trocar, a certainty of action is obtained which was otherwise out of reach. The whole performance is thus strictly at the will and under the control of the operator, who, granted his mastership, wants no other guide either as to dosage, direction or duration of the current, than the facial expression of the patient, or her declaration of tolerance.

Fourthly, other important points upon which we have clear and definite information are the modifications which this treatment requires according to the varying nature of the cases, and the successively changing circumstances of each case as the treatment is going on, and the wide range of uterine affections to which it is adaptable. Given a tumor and a current, there is no such thing as reciprocal automatic action. At every step of the process of cure, deliberation, judgment, and promptitude of resource are challenged. One day there is an unaccountable power of endurance, another an exaggerated sensibility; one day a perplexing structural resistance, another an easy flow of current,—all of which have to be taken cognizance of, and throw an ever-recurring strain upon the mindfulness of the surgeon, enough to baffle book-guided novices, and make inestimably valuable the more than five years' experience to which we can recur for counsel. A field, too, is opened up for exploration among the infinitely multiform presentations of disease of the female generative organs, untraversable by the limited powers of any one man, but to which Apostoli has pointed the way. This will be the work of the coming generation.

Lastly, there are several interesting questions upon which the work of Apostoli has thrown a new ray of light, such as the dangers and difficulties of the procedures; their being a cause, or the reverse, of subsequent sterility; the practicability of applying the treatment in cases where the uterus is impenetrable; the permanence of the benefits derived from the treatment in the mitigation of the symptoms and the reduction of the tumors; the relation of the menopause to the production or dispersion of fibroid enlargements. It would take up too much of your time if I were to consider these in detail, and it is needless, as Apostoli himself is here, on the invitation of your president, to give any required information.

But admit that there may be danger in treating our patients by electricity. Is this a reason for rejecting it? What surgical operation is free from risk? Would common sense sanction our leaving disease alone till science has reached completion and skill infallibility? The danger lies not in the method, but with the operator; and the moral is, that no man should undertake this work till he has qualified himself to do it well.

Then, as to the permanence of cure, where cure there has been,—one can only say, that, though five years and a half is but a short term to form estimates upon, when we are assured that during that time the return of symptoms, or the necessity for further measures, has been quite exceptional, it augurs well for the future, and the objection of the possibility of relapse becomes of little weight.

Again, when Apostoli tells us that some of his patients now under treatment are women in whom the tumor developed after the menopause, no trace of such a growth having previously existed, what are we to say to the principle of Hegar's operation? To say the least, it would limit castration in the treatment of uterine disease to the cases where loss of blood is the prominent symptom in younger women. I might go on much farther, but I think I have said enough to show that whatever may be or may not be the merits of Apostoli's method, we have made since he began his work a distinct scientific advance. And coupling the specific information we have thus acquired with our previous diagnostic tact and pathological exactitude, it appears to me that we are in a better position, even supposing that circumstances hinder the personal practice of the method, not only to discuss the abstract principles upon which it is based, but, as consultants, to pronounce upon its respective applicability to the cases submitted for our opinion.

There are conditions of fibroid tumors in which it would seem to me almost idle to suggest electricity. A polypoid growth from the mucous surface of the uterus projecting into the cavity, or perhaps through the os, can be so easily and expeditiously taken away, that I should not

think of any slow or gradual process. Neither does it appear very probable that a sub-peritoneal outgrowth from the body or fundus of the uterus could be in any great degree affected by any current that could be made to reach it. Myomotomy would be then the work of minutes, and the risk scarcely worth mentioning. Even large solid tumors, the removal of which means the removal of a great part of the uterus, have been successfully removed by me and others, and success has increased with experience. But the risk must be always great, and there are tumors so large, or with such intimate connections, that no prudent surgeon would meddle with them. Here, surely, is the occasion for the electrician to show his power. His method is a new resource for a desperate condition, and should be welcomed as such. It has been successful in such cases; if not completely so, yet to a degree which has rendered life enjoyable. No weak prejudice should stand in the way of recommending a trial under experienced guidance.

Where the object is mainly to suppress hæmorrhages, electrical treatment has decided advantages over other practices. Should the tumor be growing, but not advanced beyond the limits of reasonable surgical interference, balancing the comparative risk, I should be disposed to put the matter to the test; since, in case of failure, the more hazardous operation of removal can still be done. In my opinion, with the option before her, it would be neither wise nor charitable to give a patient strong advice in favor of an immediate cutting operation.

Experience seems to show that there is a group of cases, numerous as they are troublesome, of chronic metritis with enlargement and surrounding deposits, which may be cited as preëminently eligible for electric treatment. They are, as regards the patient, painful and exhausting. To the judicious surgeon they are exasperating by their rebelliousness, and in some rash hands they have opened the way to practice more lamentable than the disease. It will be one of the crowning merits of electro-therapeutics if proved to be equal to bring relief to these patients. Recent reports give good reason to hope that this end may be realized by a careful use of the positive galvano-puncture.

We have not, I am inclined to think, taken heed enough of the work of Tripier and Apostoli in reference to various disordered states of the uterine appendages. The soothing effect of the vaginal or uterine bi-polar application of the induced current in some distressing forms of ovarian neuralgia and of vaginismus, is said to be marvellous and enduring.

As a last word, I may say that we are face to face with an important revival; and though some American surgeons have gone before us in its acceptance, nowhere more than in our own country has there been shown

an open-minded readiness to weigh fairly all the evidence which Dr. Apostoli has to set forth in support.

In London we have heard through the medical journals of some failures, of one death, and of more than one accident, probably due to the inexperience of the practitioners. But we have far more encouraging reports from Edinburgh; and if some member of this society who combines sufficient knowledge of electrical science with practical experience of the diagnosis of uterine diseases, and of the treatment by other methods, will carefully put to practical test the conclusions already arrived at by Dr. Apostoli, I am very hopeful that the result will not be disappointing.

THE NON-SURGICAL TREATMENT OF GYNÆCOLOGICAL CASES.

BY HORATIO R. BIGELOW, M.D.

I HAVE been requested by the editor of the *ANNALS* to write an article or a series of articles upon the non-surgical aspect of gynæcology, for the benefit of the general practitioner who may not be a surgeon. The subject is a necessary one, and the field a large one. I have neither the time nor the physical health to do it that full justice which it merits. The tools are in the hands of every practitioner; with an average amount of intelligence in selecting, and with the experience of general medicine to guide him, any medical gentleman can achieve results equally as comforting as those of the specialist. It is a mistake — more than that it savors of ignorance — to assert that the non-surgical woman is a matter of no interest. The larger half of gynæcology — three-quarters of the whole specialty, indeed — turns upon the constitutional conditions that always associate themselves with pathological conditions of the organs within the pelvis. The nature of the vascular supply, the amount of vascular pressure, the alterations in the amount of the arterial supply, or the insufficiency of the venous current to maintain the just equipoise, — are these matters of no importance in the study of the stroma of the ovarian parenchyma, from which multilocular cysts originate, or in a proper comprehension of menstrual disorders, of altered endometrium and of glandular hyperplasia? Then, too, there are the reflex neuroses, — hundreds of them, — reflex dyspepsias, reflex hepatic, renal, bladder, and cardiac symptoms, — very many of which *will* yield, surely yield and satisfactorily, too, without resorting to any operation whatever. I shall take up first *constipation* and *dyspepsia*,

then *pain* and *insomnia*, then some *reflex neuroses* (headache, neuralgia, muscular twitching, sub-acute hysteria, and pain in the back of the head), then *neurasthenia*, later, *dislocated uteri*, together with so-called *erosions* with *eversion* (cervical glandular hyperplasia with eversion), then the general handling of some of the common *pathological conditions of the endometrium* with their relations to *menstruation*, and finally I shall hope to wind up the subject with the treatment of the *functional disorders connected with the menopause*. I am not writing a treatise upon the subject, hence much that could be said must be left unsaid. Salient points only will be studied, and these briefly. Prescriptions will be written in the metric system.

Constipation and Dyspepsia.—In most forms of constipation deep massage, following the course of the colon, up, across, and down, is a rational procedure, founded upon sound physiological laws, and subserves a most useful purpose. This may also be said of the Faradic current. I have found hepatic sluggishness associated with most of these chronic stoppages. You will notice the conjunction, by the dirty complexion, the sleepy eyes and languid air. Percuss the liver; it is very generally enlarged. The bile is not thrown out in sufficient quantity to do its work. The renal circulation is torpid. There is a lack of peristalsis in the system, a general constitutional drowsiness. There may be a tender spot just above the navel, more exaggerated and pronounced at certain regular intervals. These cases do well upon the Carlsbad Sprudel salt, a heaping teaspoonful in a tumblerful of hot water, to be sipped *slowly*. Follow with a half hour of gentle exercise, and, after an hour, a light, digestible breakfast. This is the treatment, *par excellence*, where hepatic complications exist. It produces, without pain or griping, a natural evacuation, and is especially valuable where a retroverted uterus, tender and congested, presses backward upon the rectum.

These are the cases wherein a woman forms a *habit* of constipation, dreading the pain set up by the passage of hardened fæces. The patient, in all instances, should be advised to go to a comfortable closet, at a regular hour each day. She should sit there for some time, without straining, so that the bowel may begin to realize that it has a function to perform at this hour. When the trouble is in the lower bowel, a so-called atony of the rectum, gluten suppositories give good results. Occasionally suppositories of Castile soap will also produce an evacuation. Personally I object to enemas in the majority of cases. One is very apt to depend too much upon them, and they are more or less irritating. If there be loss of appetite, one of the following prescriptions may be tried:—

R Pulv. Rhei, ch. 5.0
 Ext. Trifol, fibr. q. s., u. f., pill, No. 50

S: Five pills in the morning.

R Pulv. Rhei, ch. 5.0
 Ext. Aloes 2.0
 Ext. Colocynth 0.5
 Ext. rad. Rhei, q. s., u. f., pill, No. 50

S: Two pills in the morning and two at bedtime.

R	Ext. Colocynth	}	āā	1.0
	Pulv. rad. Rhei			
	Pulv. Aloës			
	Resinæ Salapal.			
	Gummi gutti			
	Myrrhæ			2.0

F. pill, No. 50. 1-4 pills daily.

The compound liquorice powder is also very pleasant to the taste and is efficacious. Unless the liver symptoms be pronounced, ripe fruit should be eaten freely, and out-of-door exercise prescribed.

The *dyspepsia* usually goes hand in hand with the constipation. This must be treated first by a suitably adjusted diet, and then by administering such remedies as the nature of the dyspepsia may demand. Generally hydrochloric acid alone or in combination is one of the most reliable remedies. For the cardiac uneasiness due to flatulency, try a mixture of aromatic spirits of ammonia, chloroform and peppermint water. For the pain of undigested food, or that pain which characterizes the "sensitive spot," I have used —

R	Aquæ Menth. Pip	}	āā	10.0
	Aquæ Laurocerasi			
	Tinct. Belladonna . . . . .				1.0

S: 15 drops 3 times a day.

Papsotinum alone, or with pepsin, is often of benefit. But, above all else, regulate first the bowels and the liver, at the same time ordering a light, nutritious diet. Raw meat chopped fine, the white meat of chicken in the form of a hash, and eggs. Three or four Carlsbad Sprudel lozenges eaten after each meal will dissipate unpleasant symptoms. Pure pepsin before each meal, to be followed immediately by hydrochloric acid, obtains much favor among Germans. The distress of the stomach, often complained of, when patients say they feel as if a stone were there, will

yield usually to continued massage. Uterine dyspepsia, pure and simple, will yield only to special treatment.

Pain and Insomnia.—Massage, electricity, urethan puriss., paraldehyde, and the hydrate of amyl ($(\text{C}_2\text{H}_5)^2 (\text{C}_2\text{H}_5) \text{O H}$). The latter being stronger than paraldehyde, but less powerful than chloral, may be administered as follows:—

R	Amylen : hydrat	.	.	.	8.0
	Aq. destill. .	.	.	.	60.0
	Succ. liquirit	.	.	.	10.0

m S: Half at bedtime.

Or,

R	Amylen : hydrat	.	.	.	5.0
	Aq. destill. .	.	.	.	50.0
	Mucil. gumm. arab.	.	.	.	20.0

m For one clyster.

In the “American Journal of Obstetrics” for July, 1887, I published an article on this same subject, in which I took the ground that drugs were rarely called for. I am satisfied that much better results, more permanent and enduring, can be had with massage and the Faradic current. For massage, light general rubbing, fifteen minutes to each extremity, and twenty minutes to the back, three times a week, and three times a week the general Faradic current, the feet being in a basin of warm water. A glass of milk and a roll, taken after the woman has gone to bed, or a glass of beer, may be all that is required. Then the environment of the patient must be such that subjective causes, so far as it is possible to do so, may be removed. If she go to bed to think and worry, drugging becomes criminal, because it creates an appetite for the thing that brings temporary surcease from thought. Give the patient exercise in the open air, create muscle tire by this same and by massage, and brain tire will follow. Quiet with these, and with electricity, when possible, to the entire exclusion of medicines. Drugs do no permanent good, and they upset the stomach. A warm bath just before retiring may be indicated. Keep the woman’s mind free from excitement. The pain, too, unless very severe, and due to serious causes,—the pain, I mean, of dislocated uteri, the pain of suffering ovaries,—will yield, in a large majority of instances, to massage. I know this is a fact, for I have seen its good effects in a large number of cases. Of course, I mean well-directed, intelligent massage, and not ignorant rubbing. The intolerable backache of retroverted and prolapsed uteri, the pain down the thighs of irritated ovaries, will *always* yield to massage. Give a woman only one night’s freedom from the sick-

ening, wearing backache that makes her life a burden, and she will sound your name far and wide among her acquaintances. It is the commonest of all female aches, and it is the one that above all others seems to wring the sap of life out of one, because it is a steady, persistent ache. There is no let-up to it. After rectifying the position of the uterus, to which attention will be drawn later on, try massage daily. If you are driven to medicines, try Urethan puriss. ($\text{NH}_2\text{CO}_2\text{C}_2\text{H}_5$), which is the ethylic ether of carbaminic acid. Dose, 15-20 grains. This is a real analgesic as opposed to paraldehyde and amylen, which are only hypnotics. The dose of paraldehyde is 30 m 3i, given in brandy and whiskey. Being exceedingly volatile, it should be administered immediately upon uncorking the bottle. Is the pain obstinate, and the insomnia troublesome? then resort to sponges soaked in *hot* water, following the entire length of the spinal column. Follow with brisk rubbing with a crash towel. Does the thigh pain refuse to yield, and have we reason to locate the cause in the ovary? Paint the suffering ovary with co. tincture of iodine.

Remove dragging, by supporting the uterus with tampons to which a little iodoform has been added; this is cleanly and *soothing*; massage the leg, and order a hip-bath with *bran*, — plenty of bran. After the irritation by iodine has been kept up for some time, apply a small belladonna plaster right over the tender ovary. If you can't locate it yourself, the patient can always do so *exactly*. Aim to keep at normal the functions of each viscus, attend to excretion and secretion, — and above all strive to *conquer* pain, to drive it away, rather than to hold it in abeyance until the morrow.

Reflex Neuroses. Hemicrania. — Antipyrin or quinine are favorite remedies; the former in doses of 1.0. The inhalation of 2-5 drops of nitrite of amyl is excellent in some cases. The following prescriptions have sometimes stood me in useful stead:—

R	Quiniæ sulph.	} $\overline{\text{aa}}$	. . .	0.50
	Theini			
	Sacch. alb.	. . .	2.0	
m	f. Pulv. div. in dos. = 5			
S:	1 powder each hour.			

R	Quiniæ sulph.	} $\overline{\text{aa}}$	. . .	0.50
	Caffeini citratis			
	Sacch. alb.	. . .	2.0	
m	f. Pulv. div. in dos. = 5			
One powder every two hours.				

R	Ext. cann. Ind.	0.50
	Pulv. et ext. Tarax, q. s., u. f., pill No. 25. S: one pill before each meal.	
R	Mentholi	1.0
	Ol: Olivæ	0.50
	Lanolini	8.50
m	f. ung. S: To be rubbed into the temples.	

The evaporation of ether on the temples, with a spray atomizer, and also over the stomach is frequently of great service. A cup of strong black tea is all that is necessary with many women. If much nausea be present, a mustard sinapism may be applied to the stomach. If the face be hot and flushed, and the carotid pulsations prominent, order a mustard foot-bath and a full dose of sodium bromide. So much for drugs. Now try massage; it will not disappoint, and it will often furnish *immediate* relief. It dissipates the "wound-up" feeling in the head, of which women so frequently complain. The congestive headache of plethoric women appearing at the menstrual periods, due simply to a full bodily habit, should be treated with saline cathartics twice a week for some length of time, — discontinued, of course, during menstruation. Three days before the period begin with bromide of potassium, ten grains three times a day, and continue until the second day of the flow. Cut down the farinaceous food, curtail hydro-carbons, and order the Oetel system of walks, — *i.e.* exercise daily, gradually increasing in amount. No stimulants of any kind (this including coffee), and only a moderate amount of water or tea. Then there is the headache of pale, anæmic, yellow-skinned young women, who menstruate irregularly and insufficiently. Here Bland's pills, two, three times daily, to be increased one pill every third day, act most admirably.

They work equally well [in pale, watery-eyed, but, it may be, stout women (they are almost always blondes), who, even though they be fat and seemingly well nourished, have a miserable red-blood supply, who are tortured with amenorrhœa and dull headaches. For the pain at the occiput, almost always due to a retroverted or prolapsed uterus, there is nothing to be done but to right that organ; and this may be said of the "burning spot" on the top of the head, which is so often complained of.

For the *melancholic, depressed, or hysterical* conditions which accompany faulty menstruation or pelvic disorder, we have nothing better than phosphorus, given either in pill or as an emulsion. Belladonna and cannabis indica, in *small doses*, are admirable nerve stimulants, and will,

quite often, increase the menstrual flow. The overworked, hysterical, gynæcological women who come to the physician for relief, usually suffer also from amenorrhœa, from muscular twitching, and from almost every conceivable form of nervousness. There are two points demanding attention. First, the *subjective* condition of the woman, producing the nervous innervation, which will be considered under neurasthenia, and the *objective* causes. We aim, first, to restore to normal the conditions upon which proper menstruation depend, and this point will also be briefly reviewed later. The sallow, hard skin, and bad secretory action is treated with occasional Turkish baths; the muscular twitchings, with massage (a sure cure) and the general Faradic current; the hysteria, by improving the general constitutional tone, which will bring about proper menstruation. This is done both by improving the diet, tonics, and by the Swedish movements. Some forms of the latter, practised a few days before the expected period, especially the leg movement, almost always improve the flow. Many of these cases are best treated, and only well treated, by the rest cure. In an article which I wrote for the Ninth International Medical Congress, an abstract of which appeared in the second number of this journal, I expressed my views, *in extenso*, upon extirpation of the ovaries for so-called *reflex epilepsy*. I do not believe the operation is ever demanded, for I do not believe there is any such thing as a genuine reflex (ovarian) epilepsy, in which the gray matter of the cerebrum is the central cause, and the ovary the peripheral one. Unless an absolute diagnosis can be made, of course Hegar's operation is a happy-go-lucky experiment. It may cure, and it may not. Such a diagnosis can rarely, if ever, be made.

[To be continued.]

STOMATITIS MATERNA.¹

BY GEORGE A. TYE, CHATHAM, ONT.

DURING an obstetric practice of twenty-one years, embracing more than two thousand cases of labor, I have met with many cases of a peculiar condition, incident to pregnancy and lactation. I have never found an exactly similar condition outside the puerperal state, therefore I have long considered it to be an independent disease.

I have never met with anything in medical literature to either confirm or refute this opinion. This subject was mentioned and discussed a few

¹ Read before the Detroit Gynæcological Society, March 7, 1888.

years ago in the Cincinnati Obstetrical Society, and from that report I have borrowed the name that heads this paper.

It is more commonly known as nursing sore mouth, at least amongst the laity.

The following is a short abstract, from my note-book, of two cases, the one mild, the other severe : —

CASE I. — Mrs. N. H., pregnant with her fourth child ; suffering from anæmia and slightly sore mouth for three months previous to parturition, but not sufficiently to cause her to seek assistance.

Her labor was easy and rapid, but there was excessive hæmorrhage during delivery of the placenta ; lactation was forbidden, and proper treatment prescribed.

I was called to see her again six weeks later ; she had continued to nurse the child ; the gums were red and swollen, and bled when slightly touched ; inside of the lips red and raw-looking, evidently denuded of epithelium.

The tongue was red, hot, and painful ; papillæ red and elevated ; excessive flow of saliva ; bowels obstinately constipated. She claims that everything taken in the mouth causes pain ; deglutition is painful ; distress in the stomach is caused by the reception of any form of food.

She is very weak and breathless ; pulse 100 ; temperature normal ; urine normal. She now consents to wean the baby ; she made a good recovery in six weeks.

CASE II. — Mrs. K., aged 40, previously healthy, pregnant with her sixth child. I saw her first, in consultation, in the ninth month ; she has been ailing for several months, but expected to be better after confinement ; but she has become rapidly worse ; her temperature was 102 ; pulse, 110 ; respirations, 24 ; face puffy and feet swollen, but do not pit on pressure.

The palor of the skin is extreme, urine normal ; diarrhœa has existed for the past three weeks.

Gums, lips, and tongue red, inflamed, and raw-looking ; any form of food causes great suffering ; there is constant nausea and occasional vomiting.

She retained powders of bismuth with ingluvin.

Rectal alimentation was tried, but without avail. This patient died a week previous to her expected confinement.

This affection may manifest itself as early as the fourth month ; but more frequently occurs from the sixth month to the end of the term.

After parturition, improvement slowly takes place, unless lactation is permitted. Multiparæ are more subject than primiparæ ; those who have once suffered are predisposed to its recurrence.

One of the first symptoms of this condition is a progressive anemia, with all its consequences, such as debility, breathlessness, palpitation of the heart, puffiness of the hands and feet.

The next and most characteristic symptom is the very sore mouth caused by the loss of epithelium of the mucous membrane of the mouth, and probably of the œsophagus, stomach, and bowels; these surfaces, when they can be seen, are smooth, red, and painful; the papillæ of the tongue are enlarged and look like recent granulations. There is generally an increased flow of saliva, mastication is nearly impossible, and deglutition is painful; only the blandest foods can be tolerated; nothing hot can be borne; condiments of all kinds must be avoided, and if any of these substances be taken into the stomach, the distress indicates thirst, the lesion exists there, so that there is dread of food and loss of appetite.

As a rule, the bowels are obstinately constipated, but later on there is alternation with diarrhœa, and later still, the diarrhœa is continuous.

The saliva, when examined microscopically, contains a large amount of epithelium, much more than is ever seen in a state of health.

The urine is normal, excepting there is more epithelium than usual in the deposits. I have never yet found albumen or casts.

Under the microscope the blood presents marked change, the corpuscles are greatly diminished in number, but the white and red seem to have the proper numerical relation; rouleaux do not form well, only a few being adherent in one mass. I have never counted the corpuscles, but compared the field with one of normal blood.

There are two forms of this disease, the febrile and the non-febrile, the latter being the most common and the least dangerous.

In the febrile form, the symptoms rarely increase in severity; the temperature remits in the mornings, and rarely reaches beyond 102° in the evening. These cases are sometimes fatal, the patient dying of exhaustion. Yet these are nearly all amenable to treatment, especially when seen early.

The fever in the severe cases is probably caused by the deficient nutrition and the large amount of waste products. In the milder form, or non-febrile variety, there is slight fever at irregular intervals, which is probably symptomatic of the inflammatory process in the mucous surfaces. It is true there are many cases of anemia coincident with pregnancy and lactation, presenting many of the symptoms ascribed to this condition, but they lack that peculiar lesion of the mucous membrane, which is almost pathognomonic.

I have never met an exact counterpart to this condition outside of pregnancy, nor read of any such condition until I saw an article by Dr. George

Thin, in the "English Practitioner" for November last, in which he describes a disease peculiar to tropical Asia, called Indian sprue, and which he names Psilosis. This disease, he says, is more common to women than to men, and that pregnancy predisposes to it. A short quotation will show the similarity of symptoms. "The principal symptoms are a remitting inflammation of the mouth and alimentary canal generally, irregular action of the bowels, frequent diarrhœa and anæmia. During the exacerbation the tongue is swollen, the papillæ are elevated and red. There is no fur on the tongue, which is abnormally clean. The gums may be swollen and tender and prone to bleed; when this condition is well developed the sufferer speaks with pain and difficulty, saliva dribbles from the mouth." These two diseases certainly have their leading symptoms in common.

What is, then, the etiology of this condition? Constipation generally exists in the earliest stages, and it is possible that there may be a certain amount of fecal poisoning, which Sir Andrew Clark believes to be a cause of the anæmia of chlorosis, but in the latter there is no mucous lesion; it can only be a contributory cause, and it is mentioned because clinical experience teaches the great value of moderate purgation in this affection.

Again, recent observers have found atrophy of the gastric follicles preceding and accompanying pernicious anæmia; and these follicles will not produce the proper amount of secretion when the cell formation and cell life is diminished, and thus causes the anæmia to be more progressive.

I believe the chief cause is the altered nerve supply that is induced by the gravid state, cell growth being dependent upon an abundant nerve supply; any marked deficiency in that supply would lessen the growth of the blood corpuscle and the cellular elements of the mucous membrane. Now, this supply is divided, part for the fœtus and part for the mother, and consequently the diminished force to the mother will be likely to produce the pathological state found in this disease.

It may be argued that most mothers escape this condition. Such is the case. Many possess a large reserve force and strong assimilative powers, and are therefore more than equal to the demand made upon them.

Many women improve in health during the gravid state. Blood is increased, fat stored up, and all the functions are performed with unusual vigor; yet in many cases the balance of the blood supply is altered, in the direction of anæmia; the rapid fœtal growth requires a large and daily increasing supply of nutritive material; two must be supplied instead of one, and the fœtus gets the comparatively greater share, for in almost every case their children are strong, well nourished, and seem to have gained what the mother has lost.

After parturition the lacteal secretion only supplies an equivalent for what was required in utero, and the same morbid condition continues and increases in severity. It is only stopped by the suspension of the secretion. The milk itself deteriorates, and weaning becomes an absolute necessity both for mother and child. Most mothers strongly object to this, fearing another pregnancy; others, from solicitude for their offspring, refuse to submit. I can call to mind several who have sacrificed their lives to these desires.

The treatment of these cases should be prompt and persistent; success depends upon its early recognition, that is, in severe cases.

The treatment consists essentially in increased supply of food of a bland and highly nutritious character, frequently administered, and aided by the use of digestive ferments.

Of foods, milk is at the head of the list, raw eggs properly prepared, and meat juices. Preparations of malt with hops after food are of marked benefit. If there is constipation, the bowels should be generally stimulated to action. The rhubarb and soda mixture of the U. S. Pharmacopœia with cascara is suitable and not disagreeable. A weak solution of potass. chlorid. in a mild infusion of hydrastis should be administered several times a day for its action on mucous surfaces and its tonic properties.

Iron, in a mild form, is indispensable. The dialysed iron, in doses of one-half to one drachm three times a day, is very beneficial, and also grateful to the stomach.

Diarrhœa is frequently a troublesome symptom and should be kept well under control. I have found large doses of bismuth subnitrate my best remedy, excepting in severe cases, when I have used a pill containing nitrate of silver and opium, of each a quarter of a grain, three or four times daily. Complete rest in bed is necessary while this condition obtains. In conclusion, in no case should the physician yield to his patient the continuance of nursing, for he is not likely to succeed, and may lose his patient also.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

THURSDAY, APRIL 5, 1888.

THOMAS M. DRYSDALE, M.D., in the chair.

Dr. T. M. DRYSDALE reported a case of "Multilocular Papillomatous Tumor of the Broad Ligament, producing Obstruction of the Bowels. Operation. Death from uræmia. Autopsy disclosing one kidney converted into a cyst, and the other diseased."

At the request of her physician, Dr. A. G. B. Hinkle, I was sent for, January

7, 1888, to see Mrs. M. I. K., a widow, 54 years old. She stated she was the mother of seven children, and that her labors had invariably been hard and tedious, accompanied with violent abdominal cramps. The menopause occurred when she was 46 years old. She had always been strong, worked hard, lifted heavy weights, and had had no sickness in 35 years, until last March, when she was seized with intense pain in the abdomen, together with obstinate constipation. She continued to suffer for several weeks, and her physician had great difficulty in getting the bowels moved. Medicines had so little effect that her life was despaired of, but she was finally relieved by copious purgative injections. Her disease was at first supposed to be owing to sewer-gas poisoning, as her son suffered in a similar manner at the same time, and they were treated accordingly; but finding they did not improve, a consulting physician made a more thorough examination, and found well-marked blue lines on their gums. They were then treated for lead colic, and soon recovered. The son had remained well ever since, but she had suffered from colic and constipation, while the abdomen had continued permanently swollen. Her bowels never moved satisfactorily, as only a portion of the contents seemed to come away, leaving the upper part of the intestine full. Last August, she first felt a hard tumor low down in the right side. Her abdomen since then had increased rapidly in size, while the rest of the body emaciated. Her appetite had been good, and she had no pain after her meals, but felt too full to eat much. She had constant eructations, but no vomiting. Until recently she had a slight daily movement of the bowels, but for several days past she had no evacuation. During all this time she had suffered from what she supposed was colic, and, in fact, was never free from pain. Just before I saw her she had taken a dose of castor oil, and at my visit was in great agony at the distention.

She was thin and anæmic, and her complexion had the cachectic appearance of malignant disease. The centre of her tongue was red and smooth. The abdomen was greatly enlarged, and resonant on percussion everywhere, except below a line half way between the umbilicus and pubes; there it was dull, and fluctuation could be detected. In the right iliac region I found a hard nodulated tumor, which appeared to be moderately movable; but so rigid was the abdominal wall, that it was difficult to determine this with certainty. The bladder was prolapsed and projected between the thighs, but the uterus remained within the shortened vagina, and was held up apparently by being fixed to the tumor. The uterine sound entered two inches and passed to the right. As well as could be made out, the uterus and tumor were closely adherent. Rectal examination revealed a firm immovable tumor, occupying the upper part of the pelvis. The examination, although made with the utmost gentleness, caused great pain. As frequency of micturition was a prominent symptom, Dr. Hinkle had more than once examined specimens of her urine, but finding nothing abnormal, concluded that the irritation was owing to the prolapse of the bladder. As usual, before an operation I also examined two specimens of the urine, and found it free from albumen and sugar, with a specific gravity of 1.20. She assured me that she passed the usual quantity.

The oil operated and gave her relief for 24 hours, but after this she grew rapidly worse, the symptoms of obstruction of the bowels increased, and by January 17, just ten days from my first visit, I was again sent for, and found that she had been

in such continual agony that she had concluded to submit to an operation. The abdomen was extremely hard, and in place of being tympanitic was everywhere dull on percussion, and fluctuation was general, showing that a rapid effusion of fluid had occurred.

In the presence of Drs. Hinkle, James F. Wilson, J. Howard Beck, and G. B. McCracken and assisted by my son, I operated January 22, 1888. The incision was followed by the escape of about a gallon of ascitic fluid. The peritoneum was slightly inflamed and in some parts thickened. The growth proved to be a multilocular, papillomatous tumor of the broad ligament. It filled the lower part of the abdomen on the right side and occupied the upper portion of the pelvis. Its color was not the opaque white of an ovarian cyst, but resembled in this respect the intestines. The main cyst extended upwards as high as the border of the lower ribs. To this the omentum and a loop of intestine were firmly adherent. These adhesions were detached, and the cyst drawn forward. As this was being done it burst and discharged a large quantity of red serous fluid, for, as usual, the cyst walls were very thin and easily ruptured. Two other large cysts below this were tapped, which greatly reduced the size of the tumor; but a mass of others remained, filling the upper part of the pelvis, to which they were firmly adherent. This was the portion which, by pressing on the bowels as it passed the pelvic brim, obstructed it. Here it was difficult to separate the tumor from the surrounding structures without injury to them, for it was adherent to the bladder, bowels, and everything it touched. After freeing it from all its other attachments without doing mischief, save to some vessels on the floor of the pelvis, which bled profusely, I found it was firmly bound to the uterus, which it dragged down and held close to the anterior wall of the pelvis, deep down on the right side, by an exceedingly short, firm, and vascular attachment or pedicle, which I ligated with great difficulty owing to its depth in the parts. The tumor with its capsule was then removed. This revealed a set of bleeding vessels below the pedicle, which were secured after considerable trouble. Before closing the wound the abdomen was thoroughly cleansed by irrigating it with warm water which had previously been boiled. The operation was tedious, lasting over an hour, and through it all the pulse was well maintained; but it was followed by a profound shock, shown in the pale face and thready, almost imperceptible pulse. As soon as she became conscious she complained of intense pain in the back. Under the use of stimulants and the external application of heat she reacted in about an hour.

At 5 P.M., four hours after the operation, the nurse applied the catheter and removed an ounce and a half of urine.

At 8 P.M. Dr. Hinkle and I visited her and used the catheter, but the bladder was empty. Her pulse was 112, temperature 100½°, which was the highest it reached. She complained of feeling sore all over. To relieve the suppression of urine we ordered a mustard plaster, made with warm water, to be applied over the kidneys, and prescribed a tablespoonful of the following mixture, well diluted with water, to be taken every four hours:—

R Potass. Acetatis	℥ ss.
Spiritus Ætheris Nitrosi	℥ ss.
Aque destillate	℥ iiss.

10.30 P.M. She vomited for the first time.

12.15 A.M. After an ounce of urine was drawn she became restless and complained of severe pains in the abdomen, which continued until Dr Hinkle was sent for, at 2.15 A.M. He found her with a pulse of 94 and temperature of 100° , and gave her a hypodermis injection of one-sixth of a grain of morphine. After this she slept until 5.30 A.M., when the nurse drew her urine and obtained $\frac{3}{4}$ ss.

Monday, 10.45 A.M. Pulse 118, temperature 98° . Since 7.30 A.M. had been in pain, and had vomited several times. The catheter had just been used, and about a teaspoonful of urine drawn. The abdomen was tympanitic, but not tender on pressure. The rectal tube was used, which permitted a large quantity of flatus to escape. After this the diuretic was used by injection and retained. We directed one drachm of Rochelle salt to be given every two hours, and to have a hot vapor bath.

2 P.M. Pulse 130, temperature 97° . Had vomited everything; a quarter of a grain of calomel and a teaspoonful of very hot milk were then given every hour. This quieted her stomach. At 4.50 P.M., one ounce and a half of urine was drawn. She continued drowsy but did not sleep.

9.30 P.M. One drachm of urine was removed.

Tuesday, 10.30 A.M. Pulse 130, temperature 96° . Skin cold and pale. The catheter had been used at 2 P.M. and at 9 A.M., and each time about a teaspoonful of urine was obtained. The stomach continued quiet until 8 A.M., then she vomited occasionally. Stimulants were used by the rectum, but she continued to sink, and died at 6 P.M.

The autopsy was made the next evening by Dr. McCracken, who kindly furnished me with the following notes of it: "The wound in the abdominal wall was firmly united throughout its whole extent. A moderate amount of peritonitis existed, confined principally to the lower part of the anterior abdominal wall and the lower coils of intestines, which were covered with a thin layer of pus. This was the portion of the peritoneum which was found inflamed when the abdomen was opened at the operation. The pedicle and surrounding parts from which the tumor was detached were in excellent condition. The right kidney was sought for, but could only be detected after a prolonged search, when it was found to have been converted into a large, elongated cyst, only a small portion of the upper part of the organ remaining unchanged. It resembled a distended bowel so closely that it was difficult to distinguish it from the surrounding intestines.

"The left kidney was enlarged and intensely congested. When the adherent capsule was removed, the surface of the gland presented the rough glandular appearance of inflammation. There were a number of small cysts in the cortical substance.

"This case presents several features of interest, one of which was the steady decline in temperature from $100\frac{1}{2}^{\circ}$ on Sunday to 96° on Tuesday morning; but I have brought it before you mainly for the purpose of showing how we may be deceived in regard to the condition of the kidneys, even when all signs of disease are absent in the secretions. This patient's life was dependent upon the active exercise of one organ, which itself was diseased and struggling under the load thrown upon it as the only eliminator of its kind in the body. It naturally followed then that

when the toxic effect of the ether was added to its burden it yielded and the patient died."

Dr. PARISH spoke of the toxic effect of ether on diseased kidneys, and wished to know whether Dr. Drysdale had been able to determine the renal condition in his case. He had some years ago had a case of Porro-Müller operation, in which there was parenchymatous renal disease, and in which death resulted from acute suppression of urine. It was a serious question as to what anæsthetic we should use under similar circumstances. The tumor presented by Dr. Drysdale was peculiar for a cyst of the broad ligament on account of the large amount of solid matter connected with it.

Dr. J. PRICE said there was but one authority who made any mention of the condition of the temperature under ether. Some years ago Dr. Burk had taken the temperature of a large number of patients under the anæsthetic, and found that there was invariably a depression of from one to two degrees due to cessation of combustion. The symptoms of obstruction of the bowels, as presented by Dr. Drysdale's case, were very characteristic. He had lately been dealing with some very trying cases of this kind, and pain was always present and very severe; in several cases shock and collapse had been marked symptoms of the obstruction.

Dr. DRYSDALE did not think that the decline in temperature was due to the anæsthetic, but believed it depended upon the uræmia, as he had repeatedly noted a similar depression in advanced stages of Bright's disease. The urine had been examined several times, and nothing found to indicate disease of the kidneys; in fact, there was not a single symptom present to excite suspicion of trouble in these organs, except the constant inclination to micturate, for which the prolapsed bladder was sufficient to account.

Dr. HAMILL read the following notes:—

Hæmorrhage into the placenta, or placental apoplexy, is not of rare occurrence. In the earlier stages of placental development the maternal capillary loops thrown into a network around the chorionic villi not unfrequently rupture, with a consequent effusion of blood over a greater or less area, and, at a later period of intra-uterine development, the blood current in the inter-villous blood-spaces, at all times sluggish, may become so very slow that the blood coagulates, and at birth there may be seen a clot of varying extent, more or less perfectly organized, and in some cases presenting just the laminated appearance that one sees in an aneurism undergoing obliteration. Rupture of the umbilical vein in the cord, with a rather extensive effusion of blood, has also been noted, but here the quantity of blood that can escape is of necessity limited to the comparatively small capacity of the cord. In the case that I would report to the society the apoplexy of the placenta was of fetal instead of maternal origin; the ruptured vessel was one of the large branches of the umbilical vein running across the fetal surface of the placenta, and the quantity of blood effused must have left the fetal body absolutely exsanguine. All these circumstances make the specimen a rare one; the last two make it quite unique, as far as my knowledge goes. An extended search through medical literature has failed to show me a similar case. Unfortunately I am unable to find a cause for the rupture of the blood-vessel; there was nothing in the condition of the fetus, nothing in the history of the mother, that would account for it.

Dr. HIRST was greatly pleased to see the specimen, and thought it unique. There was one somewhat similar described by Baudelocque.

Dr. KELLY remarked that he had in his possession the placenta and membranes from a case recently delivered, in which moderate traction on the cord, after separation of the child, resulted in a large hæmorrhagic extravasation between the placenta and the amnion. This was found, upon careful examination, to come from a minute rupture in the vein on the placental part as it left the cord, about two millimeters in length, and transversely to its axis.

Dr. J. PRICE had recently had a case in which death to the fœtus had occurred from a pure hanging. The cord was twice wrapped around the child's neck, and there was a deep indentation in the fœtal tissues. The cord was shortened at least one-half.

Dr. HAMILL also read the following:—

The occurrence of morning sickness in the husband after the fact of pregnancy is known or suspected, I have frequently noted. The case I would report is unique, from the fact that the sickness appeared in the husband at such an early period of pregnancy. Two weeks after the appearance of menstruation for the last time, the husband had daily morning attacks, and not until it was time for the next menstruation had the woman any other evidence that conception had taken place, and then she failed to menstruate. The husband continued having the attacks for two months. During her previous pregnancies the husband had suffered from the same attacks, but not until they were both cognizant of the fact.

Dr. WM. GOODELL remarked that Sir Francis Bacon had written some lines on this subject, the substance of which was that "loving husbands so sympathize with their pregnant wives that they have morning sickness in their own persons." A writer in the "*Lancet*" of May 4, 1878, p. 666. also refers to a case in point, which occurred in his own practice. In this case the husband's nausea and vomiting began and ended with his wife's.

Dr. PARISH presented the "Specimen of a Strangulated Ovarian Cyst," and said: The patient was not aware that anything ailed her until one night she was seized with intense abdominal pain, and jumping out of bed rushed about the house screaming with the suffering. Dr. J. H. Musser was sent for, and gave her a hypodermic injection of morphia. The dose had to be repeated frequently, and in two days the pain began to subside, it being altogether gone in five days. The temperature remained nearly normal until the fourth day, when it was found to be 103°, and was the same on the next day, the day of operation. A notable fact is that the temperature and pulse both rose steadily, while the pain as steadily decreased after the third day. I saw her on the fourth day, and agreed with Dr. Musser that we had an ovarian tumor with a twisted pedicle to deal with. Because of the absence of the husband, the operation was not performed until the next day, Jan. 17, 1888. The tumor was found to spring from the left ovary, and was very black, in this respect differing entirely from an ordinary ovarian cyst. The contents were those of an ordinary cyst, with coagulated blood in addition. The pedicle was twisted three times, and was quite soft and black. After emptying the tumor, he untwisted the pedicle and transfixed it below the point of twist, and the tumor was removed. The

recovery was very rapid, the temperature going down steadily. The drainage-tube was removed on the second day. The patient is now entirely well.

Twisting of the pedicle is a well-recognized accident to ovarian tumors, but the cases do not all present such marked changes as this case did. The specimen, as it lay on the plate, presented a very marked contrast to the cyst lying beside it, and which had been removed a few days before from the broad ligament.

In connection with this case he would report one operated on three months ago. The woman had complained of sudden intense pain in the pelvis, and was confined to her bed from that moment; she had remained in bed for over two months with general peritonitis. A number of physicians had attended her, and one of them had introduced an exploring needle into the abdomen. She was extremely exhausted, and had a constant temperature of 103° or higher. An incision was made above Poupart ligament, and opened into a tumor. It was found to contain pus and coagulated blood. Its cavity was cleansed out, and the incision closed around a drainage-tube. The cyst walls were very thick. It was a blood cyst, but it could not be determined at the time with certainty whether it was intra or extra peritoneal, but it was believed to be intra-peritoneal. In three days strangulation of the bowels developed with fecal vomiting. The bowels could not be gotten open, and a second operation was proposed on the next day, but was refused by the friends. On the day after, however, a second incision was made from a point under the spleen towards the old incision above Poupart's ligament. There was a distention of the abdominal walls in the lumbar and hypochondriac regions. Great pain under the spleen had developed. The intestines were found adherent in a mass, and three large bands were found to extend from the region of the spleen to the inguinal region. The adhesions were broken up and these bands were ligated and cut off. No frigation was used. The whole wound was closed, and a large piece of adhesive plaster was placed over it to protect it from the discharges from the lower and first incision. Convalescence was a slow one, but had finally terminated satisfactorily.

Dr. HIRST reported "Two Cases of Hydramnios." The etiology of hydramnios is so obscure that according to Bar, 44 per cent. of all cases admit of no explanation; every case, therefore, that can be traced to a distinct cause must possess some degree of interest. CASE I.—A young primipara was brought to the Maternity Pavilion of the Philadelphia Hospital in the first stage of labor. External examination showed an enormously distended abdomen, of a globular shape, giving distinct fluctuation. Internally the os was about the size of a dollar, an amniotic sac, very tense, filled up the greater part of the pelvis; to one side and above this could be felt a small foetal head, evidently macerated, covered by its membranes, with no intervening liquor amnii. The diagnosis was plain. Twin pregnancy, hydramnios of one amniotic sac, which was acting as an obstruction to labor by preventing the descent of the foetus contained in the normal sac. The distended sac was ruptured, the edges of the rubber sheet upon which the woman lay were gathered up, and all of the escaping fluid was caught; it measured five quarts. The macerated foetus was soon expelled and a living one followed soon after. The latter corresponded in development to about the eighth month of pregnancy; the former had apparently died at an earlier period of intra-uterine life. The woman said that until within five weeks she had noticed nothing unusual in her condition, but that since that time

her abdomen had rapidly increased in size, without, however, causing her much inconvenience. To explain this case of hydramnios, Werth's theory must, I think, be called upon. According to this observer, an hypertrophied placenta, in absorbing more fluid from the maternal blood than the fetal economy can dispose of, brings about hypertrophy of the fetal heart and kidneys, and a consequent polyuria; and, in addition to this, the increased pressure within the umbilical vein favors a transudation of fluid through the amniotic covering of the placenta. In the case under consideration, the placenta was quite double the size of a normal single one, with extensive anastomoses between the two sets of fetal vessels; one fetus having died, the other was suddenly called upon to deal with the very large quantity of fluid abstracted from the maternal blood by an enormous placental surface — an impossible task, so that the excess of liquid had to be gotten rid of by excretion and transudation into the amniotic cavity.

CASE II. — “Hydramnios in a Multipara with serious heart disease. Mitral regurgitation and aortic stenosis. The quantity of liquor amnii was estimated to be 4 quarts.”

If one accepts Tarnier's idea, all cases of hydramnios may be divided etiologically into two broad classes, depending either upon over-production of liquor amnii, or upon insufficient absorption of the amniotic fluid. In the latter division, it would seem that one should put this case. The veins were choked with blood, the circulation was sluggish to a degree, and if it is true, as it seems to be to my mind, that some of the liquor amnii is absorbed by the maternal vessels, the absorption here was reduced to a minimum.

Dr. HIRST also presented the following report: “I was recently called by a medical student to see a woman with an adherent placenta and post-partum hæmorrhage. I found the patient almost exsanguine and the fetus dead. The woman's friends declared that the baby had been born while the mother was on her feet, had dropped upon the floor, and had been killed by the fall; they further asserted that the after-birth had not come away. A vaginal examination showed no trace of cord or placenta; the hand, however, passed into the uterus discovered the placenta glued fast to the uterine wall, and so tightly adherent that considerable force was necessary to detach it. The cord had been torn away from the fetal surface of the placenta, leaving a spot about the size of a dollar bare of amnion. The large branches of umbilical vein were torn across.”

Dr. J. PRICE made a comparative report of hospital and out-door obstetrical cases.

I do not wish to discuss at length the old question of home *vs.* hospital practice in obstetrics. The whole matter has been fully discussed and some excellent books published on the subject. Maternity hospitals must exist for destitute women, when they need both shelter and assistance. To compare the results in out-door practice where patients reside in unsuitable and unsanitary locations with the results of a well-organized maternity hospital is impracticable without an immense amount of labor and statistics.

We all struggle to secure the prevention of death during childbirth. The diminution of maternal mortality is the chief object of our obstetrical art.

In an established maternity hospital we find difficult and complicated cases, a

constant quality in a class of patients particularly prone to accidents incident to parturition. This class of cases, particularly among the poor, cannot receive the attention of trained attendants at their homes, and hence are admitted to hospitals, because skill can do more there in averting danger and death. There are many cases which foil the most consummate skill; again, there are simple complications which defeat only the inexperienced physician and the midwife.

In the "Retreat" I aim at the highest degree of surgical cleanliness. Distance dirt and all goes well. All effete matter and refuse is removed at once from the building. The air in the wards is kept in motion. Every attention to matters of detail, especially to kindly and cleanly nursing, is insisted on. I have never been able to understand why the results of out-door practice among the poor, who have inadequate means of procuring the necessary comforts of life even in health, and who have made no provision for themselves for childbirth, should be perceptibly better than the results in hospital practice. I am aware that the statistics of out-door lying-in patients have been pronounced wholly worthless and unreliable. In order to satisfy my own mind in regard to this question I have made careful analyses of the cases coming under my own charge during a period of almost three years.

The rule in regard to dispensary cases has been attendance by graduates or students of medicine, during confinement and recovery, for at least ten days, and in the same manner as in private cases; all complications requiring the presence of myself or some one with experience. This rule has been always carefully enforced. All accidents in cases of difficult labor have been due to delay in asking for assistance. Delay is dangerous; promptitude is everything.

Hospital Practice, Preston Retreat. — Number of confinements, 101; vertex presentations, 98; breech presentations, 2; missed labors, 1 (see Note v.). Induced labors, 2; contracted pelvis, 2; syphilitic mothers, 3; syphilitic children, 3; children dropped in gutter, 1 (see Note i.). Placenta previa, 2 (see Notes ii. and iii.); lacer. perinei (closed), 6; forceps delivery, 9; version, 2; multipara, 74; primipara, 27. Previous miscarriages: one had 19, two had 4; three had 3; five had 1. Number of deaths, 0. Boys, 54; girls, 48. Twin labors, 1. Still-born males, 2 (see Note iv.); still-born females, 2. Harelip, 1; cleft palate, 1.

NOTES. — I. One child was dropped in the gutter as the mother alighted from a carriage to enter the hospital. No injury to child or mother. As there had been no antiseptic preliminary treatment, the case was carefully watched. No symptoms of septic trouble set in. Patient was absolutely comfortable during convalescence. Neither doctor nor nurse was responsible for the accident.

II. Membranes punctured. No hemorrhage where head engaged. Patient exhausted by loss of blood and extreme heat of day, and was assisted by forceps.

III. P.p. centralis, version, and delivery twenty minutes after admission. Hand not withdrawn after introduction for examination; hemorrhage great; patient exhausted.

IV. Dead probably one month before delivery. Due to fall in cellar.

V. Foot protruding from vagina when admitted. Forceps; child living.

Philadelphia Dispensary, Out-door Department. — Confinements attended, 728; vertex presentations, 738; breech presentations, 9; foot presentations, 6; shoulder presentations, 3; face presentations, 1; transverse presentations, 1; complex labors,

1; induced labors, 2; twin labors, 3; forceps deliveries, 24; version deliveries, 4; adherent placenta, 9; retained placenta, 2; rachitic pelvis, 2 (one craniotomy and one forceps delivery, death); contracted pelvis, 3; large head, 2; double inguinal hernia, mother, 1; dropsy of amnion, 1; uterine fibroids, 1; prolapsed cords, 3; placenta previa, 4; atresia of cervix, 1.

Accidents of Labor. — Lacerated perineum and cervix, not closed, 10; closed, 19; delivered at stool, 1; delivered on floor, 1; premature labors, 7.

Mothers — Pregnancy. — Primiparous, 191; second, 136; third, 99; fourth, 61; fifth, 65; sixth, 45; seventh, 37; eighth, 30; ninth, 28; tenth, 21; eleventh, 5; twelfth, 7; thirteenth, 3; fourteenth, 2; fifteenth, 1; sixteenth, 1; eighteenth, 1.

Previous Miscarriages. — 1 miscarriage, 104; 2 miscarriages, 48; 3 miscarriages, 14; 4 miscarriages, 9; 5 miscarriages, 5; 6 miscarriages, 3; 7 miscarriages, 1; 9 miscarriages, 1.

Deaths. — Septicæmia, 2; pneumonia, 1; died undelivered, 3; placenta previa, great hæmorrhage, tampon, 1. Mortality, .005.

Children. — Males, 395; females, 334; still-born males, 22; still-born females, 13.

Died during attendance: — Apoplexy of the cord, 1; hæmorrhage of bowel, 1; debility, 3.

These patients were all attended at their own homes.

Dr. HIRST said that the speaker was to be congratulated on the low mortality of the out-door cases. He had himself some months ago collected statistics of the American hospitals and of general obstetrical practice, and had been convinced from this and other investigations that the mortality of parturient women in the latter class was about one per cent. Of some 10,000 cases collected in England the mortality had been .95 of one per cent.

Dr. LONGAKER thought that, in consideration of the small number of times the forceps had been used, the foetal mortality of the out-door cases was not surprising. Had the forceps been used more frequently the death-rate would have been less. Not more than about one child out of fifty should be born dead.

Dr. WM. GOODELL read a report of his cases of laparotomy during the year 1887. He had fifty-three of them, as follows: — Ovariectomy, 27 cases, 22 recoveries, 5 deaths. Oöphorectomy, 19 cases, 18 recoveries, 1 death. Hysterectomy, 1 case, 1 recovery. Malignant tumor of omentum, 1 case, 1 death. Pelvic abscess, 2 cases, 2 recoveries. Exploratory incision, 3 cases, 3 recoveries. Total, 53 cases, 46 recoveries, 7 deaths.

He showed a table giving the name of the medical attendant of each case, and the place and time of the operation, which will be published in the "Medical News."

With regard to the fatal cases, the first one was a case of malignant papillary-cyst of both ovaries, by which every abdominal organ seemed to be infected. Bleeding intestinal adhesions needed several ligatures and the application of Monsel's solution. Unsurmountable obstruction of the bowel took place, and the woman died on the seventh day.

The second fatal case was in a short, but exceedingly fat woman, weighing 254 pounds, who could not walk without assistance. The area of raw surface made by

the deep and long abdominal wound was the most extensive Dr. Goodell had seen. Both ovaries being diseased were removed; they had contracted adhesions to the abdominal wall; and the larger weighed alone about twenty pounds. The lady was operated on at her own home in the country, and was not again seen by Dr. Goodell. She died on the fourth day, from peritonitis.

The third case was a forlorn hope. At the time of the operation she had septicæmia, she was delirious and very ill indeed, and suffered great pain. By her shrieks she disturbed one whole floor of the University Hospital, although she was on that account confined in a remote room. The cyst was intra-ligamentary, and was adherent to the abdominal wall, the intestines, the stomach, the aorta, the womb, and to the whole pelvic basin. All the adhesions but the pelvic ones were severed; but the latter were not touched, as the woman seemed to be dying, and it was apparent that she could not survive the shock of a complicated operation. Many stimulating hypodermic injections were given during and after the operation, but she never rallied, and died seven hours later. The fourth was a bed-ridden and very emaciated woman in whom the cyst had burst several weeks before, and she was being slowly poisoned by the absorption of the colloid matter. The cyst had universal adhesions, and every abdominal organ seemed infected. The peritoneal cavity was flushed and drained. The patient died on the eighth day from sheer exhaustion. The fifth death took place in a case of putrid and rotten dermoid cyst. The woman was also bed-ridden from septicæmia. During the operation, while very firm adhesions were being severed, the cyst wall was torn and a very small quantity of the offensive fluid escaped into the abdominal cavity. This was flushed and drained, but the lady died on the fifth day from septicæmia.

Of the nineteen oöphorectomies there were an unusual number of difficult cases, both on account of adhesions and of the size of the fibroid tumors, for which the ovaries were removed. In the sole fatal case, death was due to uræmia from suppression of the urine, unsuspected kidney mischief probably having previously existed.

Of the seven remaining laparotomies, one resulted in death on the forty-eighth day. It was a case of malignant solid tumor of the omentum, causing ascites and excessive pain, from which the patient had been confined to her bed for many weeks. The great vascularity of the parts, and the very extensive adhesions to the bowels, made the operation a difficult one. For two weeks the patient did well, then large abscesses burst out of the wound and into the intestines, and the drain destroyed her life on the forty-eighth day after the operation.

In the two cases of pelvic abscess the sac was sewed to the lips of the abdominal wound and a drainage-tube put in. In the case of hysterectomy, a two pound sub-peritoneal fibroid of the womb was removed, on account of pain and vesical irritation caused by it. The three exploratory incisions were made respectively for sarcoma of the womb and ovaries, for malignant disease of the intestines, and for a fibroid of the womb. In the last one it was the intention to remove the ovaries, but, on account of very firm and deeply seated adhesions, those organs could not be reached. In the other two cases of the exploratory incisions malignancy was suspected, but the operation was performed to make out a positive diagnosis.

Among the twenty-seven ovariectomies there was a larger number of difficult

cases than usual; nor had he refused to operate in any case offered him. In sixteen, both ovaries were removed. Twenty-three had adhesions, and drainage was resorted to twelve times. In three, the adhesions were universal; in six, firm intestinal adhesions existed; while in three, the cysts were intra-ligamentary, presenting very formidable obstacles to their removal. In one of these last cases the result was successful, although the wound had to be reopened four hours later to stop a deeply-seated hæmorrhage, and although a fecal fistula was established by injury to the rectum.

Dr. KELLY remarked that he had been especially pleased with the careful consideration given by Dr. Goodell to certain points in the handling of abdominal cases, which were too often looked upon as minor matters in the treatment, but are, after all, the *essentials* of success. One of the most important of all matters is the checking of hæmorrhage from adhesions to intestines, etc. A satisfactory way of checking hæmorrhage from smaller areas on the abdominal wall is by passing a needle under the peritoneum and carrying several threads across the bleeding area, and, upon tying these threads, bring raw surface to raw surface. He had seen Dr. Zweifel, of Leipsic, invert a *large* bleeding area on the abdominal wall, and, transfixing skin, muscles, and peritoneum from without, fasten a number of sutures to ivory rods on either side of the skin-flap thus formed. He had frequently used the cautery in times past, but not recently. In a recent case of severe general hæmorrhage from the base of the whole broad ligament, after removing a distended Fallopian tube, he had checked the bleeding by a series of ligatures enclosing the whole broad ligament, from its pelvic attachment to the uterus, introduced entirely beneath the raw surface.

A practical point of the utmost importance upon which he would insist, is that when the bleeding is checked all the danger is not obviated, whenever there has been much stripping of the peritoneal adhesions, in spite of the fact that the bleeding may have been checked. A lymph flow, sometimes profuse, is often poured into the abdomen, and, if it is not carried off at once by the peritoneum, it forms an excellent culture-field for the few bacteria which are almost sure to enter at any operation. The drainage-tube meets this danger.

He has had a good many cases of rectal fistula which have been very troublesome, but the tendency here seems to be to heal. The peculiar liability of pus cases to this accident is readily accounted for by the tendency of the abscess to form rectal adhesions, and, ulcerating through, to evacuate itself. In many cases the wall between the abscess and rectum must be very thin. The best after-treatment in abdominal cases is to put them in the hands of a trained nurse, and leave much to her judgment.

Dr. GOODELL liked to give credit to his fellow-countrymen whenever he could, and, if he was not mistaken, the credit of first doubling peritoneum on itself and maintaining bleeding surfaces in contact by pins or by quill sutures was due to Dr. Kimball, of Lowell, Mass. Several years ago Dr. Goodell had resorted to this plan, but not since he had used Monsel's solution, or the thermo-cautery.

J. M. BALDY,
Secretary.

MEETING OF THE AMERICAN MEDICAL
ASSOCIATION.

THE meeting of the American Medical Association was duly held, according to the published programme, and the papers were of great interest, and many of them of great importance.

Perhaps the most original was the essay of Dr. N. Senn, of Milwaukee, before the surgical section, on "Rectal Insufflation with hydrogen gas as an infallible diagnostic measure in ascertaining the existence of visceral injury of the gastro-intestinal canal in penetrating wounds of the abdomen." The title of the paper sufficiently explains its scope; the greatest interest centered in the experiments by which it was illustrated. By experiments on dogs Dr. Senn showed that hydrogen gas, forced gently and gradually into the rectum, passes into the stomach, where it can be collected and led through a tube out through the mouth, and there demonstrated by burning in a jet. The experiment was then repeated on dogs just shot through the abdomen, showing that the hydrogen gas passes out of any wounds which may have perforated the intestine, and may be led out through the external wound by a tube, and similarly burned in a jet at the end of the tube.

The great importance of this fact in securing consent to an immediate operation after a penetrating wound of the abdomen is easily apparent. The experiments have since been brilliantly repeated by Dr. J. Price, before the Pennsylvania State Medical Society. There were various other excellent papers on abdominal surgery read before the surgical section.

In the section for obstetrics and gynecology there was an abundance of material, much of it showing a valuable and permanent addition to our knowledge.

The address of the chairman, Dr. Van de Warker, deploring the insufficient way in which gynecology is taught in most of our colleges, was timely, forcible, and true. He recommended the establishment of separate chairs of gynecology in all schools and the adoption of the graded system.

The paper of Dr. Goodell, on "The Nervous Rectum," was original, instructive, and amusing. He considers that "hysteria often exhibits itself chiefly by some localized disorder. It becomes, as it were, a sort of muscular insanity. The mind is sane, and the individual, as a whole, above reproach, and yet those muscles will behave as if bereft of reason. The muscles most liable to become hysterical are the circular ones, viz., the sphincters of outlets and inlets, and under this class he considers the hysterical rectum.

The various curious nervous disorders of this part of the system were considered, and general treatment of the hysterical condition and of the accompanying nerve prostration advised.

Dr. J. Price, of Philadelphia, described the organization of a system of free nursing in that city; this is given in this number.

The valuable papers of Dr. Jaggard, as well as that of Dr. Martin, further emphasized the views which they have embodied in recent publications.

The secretary of the section, Dr. E. W. Cushing, read a paper, illustrated with photomicrographs, which he had made from specimens which he had removed by curetting. The object was to point out the facility with which a diagnosis of adenoma of the body of the uterus can be made. By the microscope the disease can be diagnosticated with certainty before any such malignant degeneration has occurred as to infect neighboring parts, and while vaginal hysterectomy is simple and comparatively easy. The distinctions between endometritis, adenoma, and carcinoma corporis were carefully pointed out.

The proceedings of the third day were of great interest, all the papers being on the subject of abdominal section.

A most important paper was that of Dr. A. W. Johnstone, of Danville, Ky., recommending and supporting the operative treatment of extra-uterine pregnancy. Dr. Wathen, of Louisville, Ky., also read a paper advising the same treatment. Dr. Myers, of Fort Wayne, Ind., made a good presentation of the grounds of and indications for operative treatment in peritonitis, and described the modern treatment by saline cathartics instead of opium; while Dr. Rufus B. Hall, of Cincinnati, read a most valuable paper on the operative treatment of pelvic inflammation.

The discussion of all the papers on laparotomy was ably opened by Dr. Goodell. In the main he agreed with the positions taken by the authors, but found some of their statements too sweeping. He liked the use of salines in peritonitis, as described by Dr. Myers, when tympanitis or peritonitis followed an abdominal section; if, however, vomiting was present, he prefers to give calomel. Sometimes, in cases of great pain, he uses opium. If given by suppository, opium, by paralyzing the rectum, prevents that escape of flatus which is important in these cases. Dr. G. pointed out that, although in the early editions of his book, quoted by Dr. Reed, and published eight years ago, he deprecated the early interference with abdominal cystic tumors, yet that he had not ceased to learn, and during these eight years he had learned that this advice of his against an early interference was wrong, and had so stated in the last edition of "Lessons in Gynæcology." He still thinks well of tapping in parovarian cysts, or in enormous cysts, as a preliminary to the radical operation. He

also does not recommend operation on tumors of moderate size which are entirely quiescent and not growing.

In regard to Dr. Hall's views on the treatment of salpingitis, Dr. G. also considered them as too sweeping, as many cases of hydro- and of hæmato-salpinx were cured without operation; and even in cases of pyo-salpinx such a state of quiescence and comfort as precluded the necessity of operation was not infrequent unless the pyo-salpinx were of gonorrhæal origin. The latter he regarded as almost, but not wholly incurable.

Dr. G. would decide the advisability of operating for each case not only according to the physical condition, but according to the social position, and the possibility of having physical rest and appropriate treatment, which, to be effectual, must be long continued and expensive. He has reason to think that after oöphorectomy the sexual feeling, although sometimes at first exaggerated, is, in a few years, blunted or lost. The danger of death from operation is also to be remembered. He fully agreed with the views expressed by Drs. Johnstone and Wathen in favor of the early treatment of tubal pregnancy by laparotomy, even before rupture.

The discussion of these interesting papers came to an untimely end, inasmuch as Dr. Battey, feeling aggrieved at the remarks of Dr. Hall, who had given Mr. Tait the credit for introducing the operative treatment of salpingitis by removal of the uterine appendages, now entered on a long review of the early history of oöphorectomy, and his claims in connection with it. He cited manifold dates and publications to show how Mr. Tait had claimed credit which really belonged to Dr. Battey, and pretty plainly implied bad faith to the former.

Of course no one could answer all this without looking up all the references in a medical library; but Dr. Johnstone and Dr. Hall, former private pupils of Mr. Tait, answered for him as well as the shortness of the time, and the respect due a man who is so much their senior as Dr. Battey, would allow. Dr. Hall, in closing, pointed out, what seemed apparent enough from his paper, that in speaking of Tait as the founder of the operation known by his name for salpingitis, or so-called pelvic cellulitis, he had no intention of disputing Dr. Battey's claim to honor as the founder of the operation of oöphorectomy for artificial induction of the menopause, for the relief of various severe and intractable neuroses.

Dr. H. A. Kelley accused Mr. Tait of asserting, on insufficient evidence, that what he found in operations was tubal pregnancy, and of sending away or throwing away the specimens without sufficient examination. These assertions were immediately denied by Dr. Johnstone.

At the request of the secretary of the section, Dr. Battey reduced his remarks to writing, and they will be published in due time. A copy of

the remarks, as so written out, and of Dr. Kelley's assertions, was sent by the secretary to Professor Tait who has a thorough command of language and is perfectly able to present his side of the case with adequate directness and vigor.

The next meeting of the American Medical Association will be held at Newport, R.I. Dr. Wathen, of Louisville, Ky., was elected Chairman, and Dr. Carpenter, of Cleveland, Ohio, was elected Secretary, of the section of obstetrics and gynæcology for the next meeting.

DETROIT GYNÆCOLOGICAL SOCIETY.

STATED MEETING, MARCH 7, 1888.

THE Society met at the office of Dr. JENKS — the President in the chair.

Exhibition of Pathological Specimens and Instruments.

Dr. Manton exhibited H. Marion Sims' ether inhaler, and stated that he had used it with satisfaction.

Dr. Jenks showed his improved cervical needle.

Dr. Manton, in presenting the fragments of a uterine submucous tumor, which he had removed that morning from a patient kindly referred to him by Dr. S. P. Duffield of this city, said that, on account of the great friability of the growth, he had been obliged to remove it piecemeal. (Subsequent microscopical examination of the fragments showed it to be a fibro-sarcoma.) The tumor was somewhat larger than the doubled fist, and by reason of the high position of the uterus and extreme fleshiness of the patient, the operation for its removal was long and tedious. The patient had had local trouble for several years, for which she had been treated in a general way by several physicians of both schools. Of late the hæmorrhage and discharge had been excessive, the patient being feeble and much exsanguinated, and a radical operation had been demanded.

Dr. Jenks asked if the ecraseur had been used in the operation referred to. He (Dr. Jenks) was not in favor of the use of this instrument, preferring instead the scissors. He desired to call attention to the fact that the removal of these growths (submucous fibroids and polypi) is not as easy as might be inferred from the illustrations in the books.

Written Communications.

By invitation Dr. Geo. A. Tye, of Chatham, Ont., read a paper entitled "Stomatitis Materna." (See page 407.)

Discussion.

Dr. HUTTON said that he had been particularly interested in the paper, because he had recently had under his charge a whole family, consisting of a mother and two children, who were affected with stomatitis. In addition to this there was cough and fever present during the course of the disease, and the patients were quite anæmic. The temperature in the case of the mother had varied from 99° to 102½°; the pulse from 85 to 95. The disease ran its course in about three weeks. The treatment

had been alterative, consisting of bismuth, iron, and quinine. He (Dr. Hutton) believed that the condition in his cases was due to defective sewage.

Dr. WYMAN (by invitation) remarked that he called to mind certain cases which he had seen, and which he believed to be due to fungoid deposits on the mucous membranes. In one malignant case, he found after death patches the size of a five-cent piece resembling diphtheritic membrane.

The readiness with which these cases yielded to sulphite of soda and sulphuric acid was remarkable.

Dr. TYE had found no aphthous patches in his cases; the condition was a loss of epithelium. In his city nursing sore-mouth is a common complaint, but he had not seen a description of the disease in print until quite recently. Sulphite of soda had been frequently used, but with no very marked success.

It had been suggested by a friend from another portion of Canada, that the condition might be due to malaria, but if this were true it would be known in Detroit.

Dr. JENKS said that it had been many years since he had seen a case of nursing sore-mouth. He had an idea that it was much more common in some localities than in others. In his early practice in western New York he used to hear of the disease, but had not seen any since he came West. He thought there was no sovereign remedy for nursing sore-mouth, as all had been tried, and all had failed. In one case, the mother of nine or ten children always had stomatitis. This continued as long as the child was put to the breast, but stopped on discontinuance of nursing.

He (Dr. Jenks) would like to ask if any one had noticed any digestive disturbances in the children of mothers having stomatitis. He knew of one such, but this also was cured by taking the child from the breast.

Dr. BANKS (by invitation) said that she had seen a number of cases of nursing sore-mouth. In some of these tonic treatment was effective.

Dr. Jenks moved a vote of thanks to Dr. Tye for his able and instructive paper. Carried.

W. P. MANTON, M.D.,

Editor.

A SYSTEM OF FREE NURSING, AS ORGANIZED IN PHILADELPHIA.¹

BY JOSEPH PRICE, M.D., PHILADELPHIA.

I DESIRE to call the attention of this Association to this system of free nursing, because I regard it as a most valuable factor in the proper treatment of the sick poor; as a necessary lesson to the lower classes in cleanliness and the care of the sick; as the most efficient aid to the surgeon in non-paying practice; and because I hope that the idea suggested may prove to be of practical benefit to the profession in cities and towns not blessed with suitable institutions for the proper care of the sick poor.

The visiting-nurse society of Philadelphia was organized two years

¹Read before the American Medical Association.

ago, by a few charitable ladies, for the purpose, as their charter reads, "of furnishing visiting nurses to those otherwise unable to procure skilled attendance in time of illness; to teach cleanliness and the proper care of the sick." It is supported by voluntary contributions and such small amounts as the patients may be able to pay; and the last report shows a remarkable amount of practical benevolence secured by the outlay of a very small sum. In the beginning the society employed a trained nurse, with one or two assistants, who were also pupils. Additional nurses were employed as necessity demanded, until the staff now consists of seven nurses and assistants, and one maternity nurse. Special nurses are provided for contagious diseases, the regular staff not coming in contact with such cases. The society was very fortunate in their selection of a head-nurse, who has more than ordinary ability both in practising and teaching her profession. The assistants are young, healthy women, carefully selected and trained. In cases demanding immediate operation, these nurses make all preparations on the shortest notice; viz., thorough cleaning of the room and person of the patient, often supplying body and bed linen, one or more nurses to assist in the operation, and one to care for the patient during subsequent treatment. I have known these nurses to go in an attic or cellar in the heart of the slums of the city, the rooms reeking with filth and overrun with vermin, the patients fit inhabitants of their homes. In a few hours the nurses have cleaned the room, supplied the necessary furniture and utensils, and prepared the patient for an abdominal section. With such an organization at his command the surgeon or physician has no hesitation to fear the undertaking any case at the homes of even the poorest of patients. In the clinic of the female department of the Philadelphia dispensary, for years I did not attempt to do any of the abdominal work which constantly presented itself, because of the lack of such a free system of trained nurses. Since the organization of this society we have done over 90 abdominal sections in the alleys and courts of this city, with only one death. These were not selected cases, but were done because they were imperative. In addition, many general operations, of more or less severity, have been performed, and in every instance the nurses of this society have proved themselves equal to the occasion. During the past year the society has cared for 90 surgical cases out of a general list of 369, necessitating nearly 6,000 visits. So far, during this year, they have attended nearly 200 cases, of which 50 per cent. were surgical.

The medical profession of Philadelphia has reason to congratulate itself upon the possession of such an efficient corps of assistants, and to wish for the extension of the benevolence to localities less favored.

HOSPITAL REPORT.

ONE HUNDRED AND FIFTY CASES OF DILATATION AND CURETTING OF UTERUS. — NO DEATHS. — MURDOCK FREE SURGICAL HOSPITAL FOR WOMEN. — SERVICE OF DR. E. W. CUSHING. — REPORTED BY F. L. BURT, M.D.

THE following list of cases, one hundred and fifty in number, comprises a large class which, during the last year, have received the operation of curetting, or dilatation and curetting, for disorders which come into the following table : —

Chronic Endometritis .	{	Laceration of cervix .	74
		Anteflexion . . .	33
		Retroflexion . . .	7
Hæmorrhage . . .	{	Fibroid	3
		Retained secundines .	4
		Polyp	4
		Adenoma	3
		Carcinoma	22

— 150

The conditions of the patients were very various, comprising all stages, — from those who were able to be about most of the time, who came for operation simply as a relief from the menstrual pain, to those who were very greatly reduced by uterine hæmorrhages from the different causes, or from the pain and continued discharges of a malignant disease.

The operation, essentially the same in all cases, is performed after the following manner: The patient is first prepared, as is the usual custom before operating, by having the bowels thoroughly evacuated, and fasting at least one meal, usually the breakfast. A little stimulant may be given previously, if desired, but no solid food in any case. In case the patient is likely to have any difficulty of breathing from throat mucus, an injection of atropine will generally prove very satisfactory. Patient should be in hospital one day before operating, for the sake of preparation, and it should not be undertaken otherwise, except in urgent cases, and then with considerable care.

From want of these precautions, I have, on several occasions, although not in this hospital, seen tracheotomy performed to relieve the larynx of solid vomitus. I have never seen this prove fatal, yet it is a very disagreeable complication.

Attention to the bowels is important; firstly, because it relieves the system and makes the patient vastly more comfortable; secondly, because, with the intestinal tract clear, the presence of any growth is more easily diagnosticated, the position of the uterus more clearly defined, and whether or no there is disease of the uterine appendages can be more accurately determined.

Patient is anæsthetized, and, when fully under the influence, is placed in the lithotomy position, with knees well flexed and limbs held by leather straps, as desired.

With this arrangement less assistance is required. The external parts and vagina are now washed thoroughly, after which sublimate soap is applied, and the vagina is irrigated with a $\frac{1}{2000}$ sublimate solution. Next, and before using any instruments, the patient is to have a thorough examination bimanually, to make sure that nothing has escaped notice. Many unmarried women, and those suffering from vaginitis and kindred conditions, can only be examined satisfactorily while under ether, and it should not be omitted in such cases.

The diagnosis thus made, the case is ready for operation. A speculum is inserted, preferably that which is used in this hospital, which is made from an ordinary piece of lead pipe and has the great advantages of retracting the perinæum by its own weight, and also of carrying off the irrigation fluid.

The vaginal walls are well spread apart, so as to give room. Uterus is next sounded under irrigation fluid, and from it we learn the direction of the canal, its depth, and something as to its shape, and the character as to hardness or softness of the tissues. The cervix is now held in position by two forceps, which can be attached to any point, preferably to the anterior and posterior lips. The descent of the uterus will be complete in case no adhesions are present.

Should the os be sufficiently large to admit a curette the tissue can be removed without difficulty, and no dilatation will be necessary; but, on the other hand, should the canal be irregular, or too small to admit an instrument, dilatation will be found necessary. This process should be accomplished as follows: Nothing but a metal instrument is satisfactory, and the process should be a rapid one at one sitting; it takes from a few seconds to four or five minutes to perform it, the anæsthetic being administered but once. There is no occasion for the use of tents of any description. None of them will be found to do the work just as it is desired, and sometimes they are harmful, even dangerous. In some cases the cervix is quite soft, and will dilate very readily with but slight pressure; while in other cases the tissues are so dense and the os so

small that more time and pressure are required to separate the muscular fibres. Some cases will be found which are so tough and difficult to dilate that the tissues will immediately retract to their former condition. Such cases do better if the fibres are slightly divided in two to four places, a plug being inserted afterwards, so that when the healing process is completed it will be found that the canal has been kept open. After the dilatation the curette is introduced, and the membrane is removed so long as it feels soft, the sensation of the hard muscular tissue beneath being an indication that all the diseased parts are removed. The curette does not take the whole of the *débris* from the uterus, and the rest can be washed away by allowing the irrigation fluid to pass directly into the uterus, and by swabbing with a small cotton applicator. The plug is usually placed in the canal in cases where much dilatation is required, especially where there is ante flexion, stenosis, and conical cervix. It is well to place a tampon of cotton or wool, saturated with iodoform or boracic acid, below the cervix, to help to hold the plug in position. The instruments used for this operation are the speculum, two pairs bullet forceps, uterine sound, dilator of Goodell or the Wylie modification of Sims, Sims' curette, a small knife, and a uterine plug.

Following this operation the patients usually have no symptoms whatever of which to complain, and they even wonder why they are kept in bed. This is required, no matter how well they may feel, for about a week, or certainly so long as there is an instrument in the uterine cavity, the time varying from three to ten days before removal, depending, of course, upon the case; frequently it comes away of itself. Patient receives no further treatment, except an irrigation, and repacking if necessary, every three or four days. Average time for discharge about twelve days. Among these one hundred and fifty cases many will be found very interesting and worthy of considerable attention, yet I can only pass hastily over the records of them.

Although they can all be well comprised under the foregoing table, some cases were diagnosed by two or three different terms, and have something outside of this list as a complication. We will now look at the different classes separately. One case was a woman of 54 years, who ceased menstruating, but had flowed for eight weeks. She was curetted for diagnosis, suspecting malignant disease; but such was not found. The peculiar part of her case was a condition which has been called hysterical bloating, the bowels swelling, to become very tense, and going down on passing a catheter into the uterus. I went through this process once, with the end of the catheter under water, and no gas escaped, but the bloot seemed to disappear like a flash.

In four cases there was a discharge in which the gonococcus was found, and in all cases except one, in which the tubes had become involved, the cases were cured by curetting. This case I previously reported in the March number, in this journal, p. 288, as cured of *Salpingitis*; but she is not cured, and will require Tait's operation, "cellulitis" having recurred three months after leaving the hospital.

One case of hysterо-epilepsy was relieved of the endometritis, but the fits persisted. She has had the best medical treatment from various hospitals and practitioners, but with no benefit. Another case, one of constant vomiting, thought to be of uterine origin, was dilated and curetted with immediate relief, and, as I understand, a cure. This patient left the hospital on the third day.

Anteflexion was present in thirty-three cases, and retroflexion or version in seven cases. The normal position is restored as much as possible during the examination, and it is well to get the uterus straightened by previous treatment. A great deal is accomplished by the dilators, and the plug kept in position exerts a constant pressure, and prevents the uterus from bending upon itself. Tamponning in front of or behind the cervix will assist in relieving the flexion or version.

Ten cases are of subinvolution, and there was endometritis or hæmorrhage associated. Curetting and application of strong carbolic acid often remove the cause, or stimulate so as to cause contraction, and cure the patient. If the case is an old one, and the tissues in a state of chronic hyperplasia, curetting will not cure.

A conical cervix is described in twenty cases. The elongated cervix is shortened by dilating, and the difficulty is relieved by this process, which with curetting will cure the associated dysmenorrhœa or endometritis. Lacerated cervix was a complication in seventy-four cases. The chronic endometritis which was present in all of them was the principal cause of the symptoms complained of. The cervix was repaired in each case, an operation of which I hope to publish some records soon, following the removal of the inflamed mucous membrane, which was the essence of the disease. Some cases needed a little intrauterine caustic application following, and each resulted in a cure. In twenty cases where erosion of the cervix was present it was very easy of cure when associated with a lacerated cervix, as the eroded tissue was cut away so as to make fresh surfaces for apposition, so as to form a new cervix. Cases of erosion in which no laceration was present were treated by the usual medical application, or touched up once with the Paquelin cautery.

Of fourteen cases of stenosis it was often necessary to slit the cervix slightly, as otherwise, if only dilated, it would return to its natural con-

dition. Unless the fibres contracted very strongly afterward, so as to throw out the plug, there would be healing, with enlarged canal and cure.

Dysmenorrhœa is recorded in fifty-one cases. If the pain was due to a diseased condition of the endometrium with or without malposition of the uterus, this operation was a means of cure in most cases, and a great relief in others.

If complicated with disease of the uterine appendages the chances of success are doubtful by this method. Medical treatment should be first employed, and, if unsuccessful, more serious surgery can be considered.

Two-thirds of all patients suffered with chronic endometritis. These cases were curetted, and considerable quantities of diseased membrane were removed in each case, and the innumerable symptoms complained of from this cause were removed. The discharge of thick mucus ceased, and the membrane came into a healthy condition.

Dilatation and curetting in all of these cases should be done with great care, as too much force would lacerate the cervix or rupture the uterus, both of which conditions it is very desirable to avoid. The curette should be handled very tenderly, as only little force is necessary to remove diseased tissue. The sound, also, should be passed very gently, as only little force would be required in some cases, where the tissues are soft, to make a passage into the abdominal cavity. In two cases which I have seen, in which this was thought to have been done, no harm has resulted; but we could not say that it is altogether free from danger, and it should be avoided with great care.

Under the subject of uterine hæmorrhage there are three cases of fibroid. Small tumors, sloughing or otherwise, may be removed by the curetting, while for larger growths a more serious operation is demanded, if there can be no control of the hæmorrhage by medicinal treatment. In any case relief from hæmorrhage for a long period may be afforded by curetting.

Of retained secundines, — four cases, — there was complete relief and cure by removal of the foreign substance by curetting. Polyps were removed in four cases, also, with complete cessation of bleeding and a cure. There are three cases of adenoma in which a curetting was necessary at intervals of three to five months, to remove the accumulated disease of that period. This is no cure, only temporary relief. One patient of this class was operated on lately by vaginal hysterectomy with success, and this operation is indicated while in the early stages, and before any disease has passed beyond uterine tissue.

More serious is the operation for the carcinomata, many patients coming for operation only when it is too late and after the vaginal or pelvic

tissues have become involved. In such cases much degenerated tissue must be removed with a sharp spoon, followed often by the cautery. Many such cases are refused operation by surgeons, evidently with the idea that it will do no good. This is correct in a few cases, perhaps; but in a majority of them it is a mistake. These twenty-two cases were considered absolutely hopeless as to final recovery, in women whose ages ranged from 40 to 70 years. I have the record of several whose symptoms of pain and disgusting discharge were entirely relieved, and the result as a palliative measure is encouraging in the extreme, life being sometimes apparently prolonged for many months. In case they do not live any longer, there is relief from some of the pain and the disgusting odor which would come from the sloughing tissue if it were not removed.

REVIEW.

ABDOMINAL SURGERY. By J. Greig Smith, M.A., F.R.S.E., Surgeon to the British Royal Infirmary, etc. Second edition, revised and much enlarged. P. Blakiston, Son, & Co., Philadelphia. Pp. xvi, 770. Cloth, \$7.00.

In the February number of this journal was published at some length Dr. McMurtry's review of this admirable work, and therefore it may be presumed that the general scope and nature are known to the readers of the ANNALS. After being out of print for six months, owing to the rapid sale of the first edition, it reappears enlarged, and rewritten. The author in his preface says, "The advances made in the practical surgery of the abdomen, in the few months which have elapsed since the work was written, are truly astounding. For every operation some improvement has had to be chronicled, and several new operations have been added. The whole subject of reparative surgery of the abdomen, being now placed on a basis which is comparatively permanent, has been elevated to the dignity of an independent section. This section is practically a new one. In deference to the opinion of certain reviewers, and, it must be confessed, in harmony with a personal feeling, a new section, on Suprapubic Cystotomy, has been introduced."

These two sections form in themselves a valuable work of 120 pages.

The section for supra-pubic cystotomy is of great interest, and the full history given shows clearly how active and daring were our predecessors in surgery. They devised and performed, nearly three hundred years ago, this operation, the latest improvement in abdominal surgery, although it was only after the year 1718 that it became a recognized sur-

gical procedure, when the brothers Douglas of London took it up. The next improver of the operation was Thornhill, of Bristol, in 1722 and afterwards. By his friend Middleton was published a monograph of forty-seven pages, which describes the operation practically as it stands to-day. The anatomical points are indicated and figured with the greatest accuracy. "From this period almost to the present day the operation steadily declined, both in favor and in mode of performance; we need not follow its fortunes. Its revival has been simply part of the general revival of surgery, which has marked the last twenty years. At the present day the operation is where Douglas and Thornhill left it, improved in the same manner and by the same influences as other surgical operations have been improved, and not least in the way of discarding all ingenious contrivances for doing away with the necessity for educated fingers and anatomical knowledge."

In general, the author says that the supra-pubic operation may be called for in dealing with any conditions which may demand cystotomy. He then proceeds to compare most carefully and judiciously the relative values of this and of other operations, in the various conditions which may require it. For example, he recommends it for stones too large or hard for Bigelow's operation; and in children and in old patients; for the removal of foreign bodies which are long and brittle, or with sharp ends; for most varieties of tumor, etc. The anatomical considerations, the *modus operandi*, and the after-treatment follow in due order, with singular lucidity and completeness.

The chapters on gunshot and other wounds of the abdomen, and on rupture and other injuries of the viscera, have been enlarged, and fully represent the most modern technique and opinion on this subject. Full credit is given to the work of American surgeons in this department. The references in these chapters, as well as in the succeeding ones on perforated typhoid ulcer, purulent collections in the pelvis, and tubercular peritonitis, have all been brought up to January, 1888, and contain much information invaluable to the surgeon responsible for abdominal cases.

Among the minor additions to this edition may be mentioned Keith's mode of treating the pedicle in ovariectomy; cervical amputation of the uterus for cancer; the operations of Richardson and of Bull for removal of foreign bodies impacted in the lower œsophagus; Bernay's operation for removal of growths in the stomach; and the modifications of laparocolotomy introduced by Allingham and by Bull. The previous edition of this work was so fully and so recently reviewed, that it is unnecessary to go over it here again; suffice it to say that the work is unique, complete, clear, thorough, and indispensable to the surgeon who has to recommend or perform operations on the abdominal viscera.

E. W. C.

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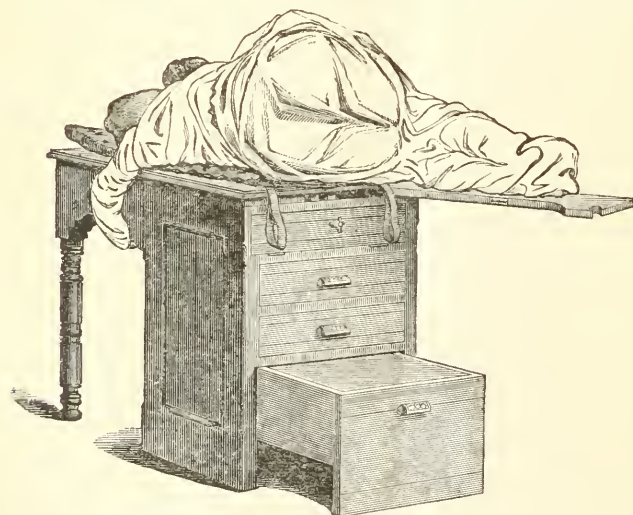
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OF

GYNÆCOLOGY

A MONTHLY REVIEW

GYNÆCOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY.

EDITED BY
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BOSTON.

WITH THE COLLABORATION OF

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JULY, 1888.

CONTENTS:

	PAGE		PAGE
THE INJECTION OF THE MUSCULAR FIBRE OF THE PERIUTERINE UTERUS, <i>Dr. A. M. Sanger</i>	417	DETROIT GYNÆCOLOGICAL SOCIETY	420
CAUSAL RENAL CHANGES AS A FACTOR IN CAU- SATION OF STILL-BIRTH, <i>Dr. E. P. Christian</i>	415	A FEMALE MONSTERY, <i>Dr. J. Reibinger</i>	420
PERI-UTERINE FLUID—DR. BATTY'S ATTACK ON MR. LAWSON TAIT,	417	OBSTETRICAL SOCIETY OF PHILADELPHIA	420
		HORTON'S REPORT	420

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Fig.1.

Fig.3.

Fig.2.

Fig.8.

Fig.4.

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Fig. 5.



Fig. 6.

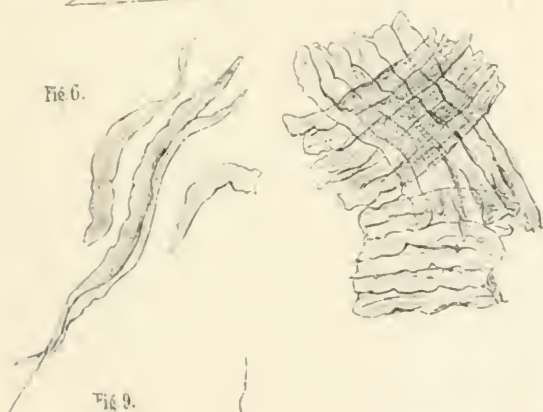


Fig. 9.



Fig. 7.





Fig. 11.



Fig. 10.



Fig. 13.

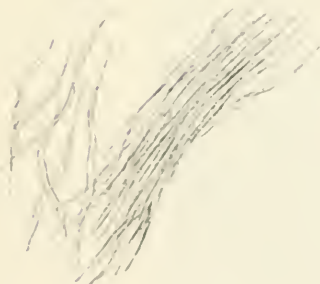


Fig. 15.



Fig. 12.



Fig. 14.







Plate IV.

FEMALE MONUMENT

Two complete and separate bodies and figures. The monument, 1876. — See page 18.

ANNALS GYNÆCOLOGY.

VOL. I.

JULY, 1888.

NO. 10.

ORIGINAL COMMUNICATIONS.

THE INVOLUTION OF THE MUSCULAR TISSUE OF THE PUERPERAL UTERUS.¹

BY DR. M. SAENGER,

Docent for Obstetrics and Gynecology at the University of Leipzig; Assistant to Prof. Wagner, from June, 1876, to March, 1878.

THAT *miracle of nature* — the extraordinary development of the uterus during pregnancy, and its retrogression to its previous small volume during the puerperium — has ever excited the greatest interest among anatomists and obstetricians. Careful investigations, however, which allowed a view of the precise character of the processes which are herein concerned, belong only to recent times; and the numerous coarsely anatomical and clinical efforts have so cleared up the field of knowledge which pertains to the involution of the puerperal uterus, that it is difficult to find anything new to contribute. Measurements of the uterus, as it gradually diminished in size, have been made by Trier, Pfannkuch, Börner, Schneider, J. Williams, Parthey, Stratz, and Hausen. Determination of the changes in the form and position of the puerperal uterus has been the object of the labors of Credé, Ed. Martin, Pfannkuch, Börner, B. S. Schultze, and Kustner; while weighings and measurements of the uterus in the cadaver have been made by Hecker, Schneider, Spiegelberg, Scanzoni, and others. Not less complete have been the microscopical investigations and studies concerning the more minute processes in the tissues of the uterus, and, in-

¹ This essay, with others by the former assistants and pupils of Professor Wagner, was prepared as an offering at the celebration of the jubilee, or fiftieth anniversary of the receipt of the degree of M.D., of this venerable teacher. The various essays were printed in a memorial volume. This is the first appearance of Dr. Saenger's essay in a medical journal.

deed, it is only by knowledge of this character that an explanation of the true nature of puerperal involution can be obtained. In this connection must be mentioned the investigations of Friedländer, Kundrat-Engelmann, Virchow, and Leopold, concerning the regeneration of the mucous membrane of the puerperal uterus, which were conducted to a provisional conclusion.

The relations of the blood-vessels of the puerperal uterus have been subjected to a careful investigation by Balin;¹ those of its nerves by H. H. Freund.² L. Bernstein³ has studied the retrograde changes in the connective tissue. It would, therefore, seem probable that the microscopical investigation as to the degenerative changes which occur in that tissue which forms the greater part of the volume of the uterus — namely, the muscular tissue — must have been exhaustively considered. As a matter of fact, that is not the case. As the development of the uterus during pregnancy is primarily concerned with the muscular fibres, so must puerperal involution chiefly depend upon changes which take place in them. Whatever the nature of these may be, whatever the nature of puerperal involution of the uterus in general may be, the few investigations and theories which have thus far been promulgated are decidedly inharmonious; and it is my purpose, in this paper, to bring forward new arguments to harmonize these varying views wherever that is possible. If one searches the literature of this subject, as it exists in the various magazine articles and in the text-books on obstetrics and general pathology, one finds four explanations, based upon anatomical researches, which have been advanced concerning the relations of the muscular tissue of the puerperal uterus, and concerning the process of involution of the entire organ. These are attributed to Heschl, Kölliker, Luschka, and Meola.

(1.) According to Heschl,⁴ the muscular tissue of the uterus is completely disposed of during the puerperium by fatty degeneration, and is renewed by a new development of muscular fibres which proceeds from without inward. Not a fibre remains of the *old* uterus. Heschl first discusses the conditions of weight and size of the puerperal uterus, and also the changes which take place in its mucous membrane; he then expresses his opinion as follows: —

“ The substance proper of the uterus undergoes such a complete conversion into molecular fat, that not a fibre remains of the uterus as it existed before the puerperium. This change does not begin before the fourth to the sixth day, and not later than the eighth; it proceeds with considerable

¹ Arch. f. Gyn. XV., 157.

² Centr. f. Gyn., 1885, No. 41.

³ Ein Beitrag zur Lehre von der puerperalen Involution des Uterus. “Inaug.-Diss Dorpat,” 1885.

⁴ Zeitsch. d. K. K. Gesellsch. d. Aerzte zu Wien, viii, Jahrg., ii, Hälfte, 1852, S. 228, u. ff.

uniformity at all points, though the cervix may continue in the condition which it had before parturition a few days longer than the other parts. A little later it will be found that the inner layers of tissue have retrograded somewhat more than the outer ones. The destructive process begins at many points at once in the individual muscle-fibrillæ, their spiral form being first lost, their contour becoming paler, and yellow granules then appearing, these changes being soon followed by the dissolution of the individual fibre-cells at their extremities where they are thinnest. The nucleus of the cell is pale but distinguishable, until it is obscured by the increasing number of the fat granules. Very soon absorption of the reduced tissue is inaugurated, and is indicated by a manifest and considerable loss of weight in the given organ. With the occurrence of fatty degeneration, the uterus assumes a friable consistency, and retains it until the customary condition of the unimpregnated organ is reached. It loses its reddish color, and becomes a dirty yellow; and these facts, together with its change in volume and weight, enable one to decide, even by examination with the naked eye, as to the period of involution which has been reached. In the fourth week, when the organ has returned nearly to its normal volume, though it may still be yellow and friable, one can usually observe the beginnings of a new development of uterine tissue in the body of the organ, its outer layers containing nuclei cells, and cells arranging themselves in the form of fibres, and thereby presenting the appearance of young uterine tissues. Seldom are these phenomena apparent at an earlier period. While the remnants of the muscular tissue are undergoing degeneration and absorption, new tissue is being developed at many points, so that in many cases the regeneration of the uterus is completed by the end of the second month.

•• Puerperal diseases do not usually interfere perceptibly with the process of involution, even if the uterus itself is diseased. On the other hand, the process of reconstruction in these, and usually in other puerperal processes, as well as in some other chronic morbid conditions, such as defects and malformations of the uterus (Bicornis, etc.), yields to an important anomaly. The newly formed muscular fibres, instead of becoming consolidated, very soon yield, in their turn, to a fatty metamorphosis; and this circumstance causes the brittleness and yellow color which are demonstrable for months in such cases. Such a feeble condition of the uterus is then the result of a defective reconstruction process. While the muscular fibres of the uterus are undergoing this fatty metamorphosis, they also appear to experience, under certain circumstances, and in the later stages of the process, a certain degree of swelling; these phenomena appearing in the fourth to the fifth week, and not being explainable by any other theory than the

foregoing. The veins and the larger portions of the capillaries undergo a like retrograde process, their walls being included in the process of fatty degeneration, after the contraction of the uterus has reached such a degree that they are no longer needed as a channel for the blood. Individual capillary vessels with their contents appear to undergo this retrograde metamorphosis; at least conditions are found which can be thus explained with the greatest show of probability, because they harmonize with unquestionable developments which occur in connection with other structures,—the thyroid gland, for example. The vessels which are located in the interior of the uterus can be made out for a long time, perhaps always, on account of their size and the thickness of their walls. This degenerative process occurs in like manner after abortions and after twin pregnancies, the uterus in the latter condition being decidedly larger than in ordinary pregnancies, though the process lasts very little longer.”

This theory of Heschl is adopted by most of the text-books on obstetrics, and counts as its adherents among obstetricians and anatomists such men as Kilian, Nägele-Grenser, Carl Braun, A. R. Simpson, M. Duncan, Aran, Sappey, Virchow, and Uhle-Wagner. Schröder¹ also has given his adherence to Heschl's views. His statements, even if they differ from Heschl's in some important points, may be mentioned in this connection: “As far as the gradual retrogression of the genitals to the condition which they held prior to pregnancy is concerned, the change begins in the uterus during labor. The powerful contractions which follow each other in quick succession result in the destruction of the cell contents of the smooth muscular fibres, and at the same time, by the compression of the vessels with which the tissues involved are supplied, prevent further oxidation of the protoplasm. After the delivery of the *ovum* fatty degeneration of the smooth muscular fibres proceeds. At first the cell elements are still capable of performing their functions, and the evidence of this is seen in the contractions which take place during the puerperium. After a while the albumenoid substance of the protoplasm is converted into fat, which is readily absorbed; and, as the absorption process continues, the enormously enlarged muscular cells are destroyed. When this process is at its height the new formation of young cells begins in the outermost layers of the organ, these cells being destined to form the new uterus. This process is finished at the end of six or eight weeks, when the lochial discharge usually ceases, and menstruation returns if the woman does not nurse her child. The uterus, which weighed two pounds immediately after labor, weighs not more than a pound at the end of one week, and

¹ Lehrbuch d. Geburtsh., 9 Aufl., 1886, S. 232.

at the end of two weeks its weight is usually not more than three-quarters of a pound. By the end of six weeks it has, in most cases, reached its normal size again." In the teaching of Heschl one point is not readily comprehended, namely, how it happens that, on the one hand, all the muscular fibres are destroyed, and, on the other, that new ones are to be formed, the matrix of which is also to undergo destruction. From this dilemma Spiegelberg,¹ who stands committed entirely to Heschl's doctrine, extricates himself by assuming that the new formation of the muscular structure of the uterus results from embryonal muscular elements which developed during the course of pregnancy, and could not undergo fatty metamorphosis, because they did not attain to the condition of hypertrophy. His theory of the entire process of involution of the uterus is as follows:—

"In the course of degeneration, two processes, which are nearly independent of each other, run side by side,—the reduction in volume of the organ, and the reconstruction of its mucous membrane. The reduction in the volume begins at parturition, and is subsequently continued by the same agent, namely, the contractions of the organ, which are now denominated after-pains. They soon effect a permanent diminution in size and permanently changed arrangement of the muscular fibres. The resulting inactivity and anæmia of the muscular tissue is followed by fatty degeneration, destruction of the fibres, and resorption of the cell contents.

"The anæmia of the puerperal uterus is a natural consequence, partly of the inactivity of the organ, which continues day by day, partly of the compression of numerous vessels in the contracted and retracted muscular tissue. Whether the muscular fibres disappear entirely, or only in part, is not yet determined. The fatty change is clearly evident microscopically from the fifth to the eighth day, at least in the cervical portion. Upon section the uterus is then of a reddish yellow color, sometimes a pale yellow, and drops of fat are perceptible to the naked eye. The tissue is extremely soft, brittle, and easily torn. In the fourth week a new formation is first discoverable, the earliest indications being in the outer layers of the wall, where numerous long, nucleated cells are to be seen, which develop into short muscle-cells. (In his first edition Spiegelberg says, 'whence they come has not yet been discovered.')

"Whether this is a true new formation is very questionable. In all probability these apparently newly formed cells are stored up embryonal muscle elements, which did not hypertrophy in the precedent pregnancy, and, therefore, do not now undergo fatty degeneration. Thus, destruction and development in the wall of the uterus now proceed simul-

¹ *Lehrb. d. Geburtsh.*, ii. Aufl., 1882, S. 261.

taneously, and the entire process usually comes to an end in the course of eight weeks. As a rule, puerperal diseases have no influence upon this process.

“Other elements in the wall of the uterus undergo degeneration at the same time with the muscular fibres; this is especially the case with a large portion of the vessels. The large arteries are obliterated by a connective tissue proliferation of the *intima*, or else their lumen becomes very much narrowed. In the *media* there is also a fatty degeneration to a certain extent. The larger veins undergo similar changes. The capillaries, compressed by the muscular tissue, share in the process of fatty degeneration. The blood spaces and veins at the placental site disappear by the agency of an obliterating thrombosis.

“The final effect of the degeneration of the womb is seen in the diminution of its volume. At the end of six weeks the organ has nearly resumed its original size, although it always appears somewhat more voluminous and rounded than the nulliparous uterus.”

(2.) In respect to Kölliker's theory concerning the puerperal involution of the uterus¹ the following statements are made:—

“The diminution in the volume of the uterus after parturition, and the resumption by that organ of a condition which, if not identical with, is yet similar to the one which it maintained before pregnancy occurred, does not take place in exactly the same manner in its different parts. In the muscular tissue atrophy of the contractile fibre-elements plays the chief part; these elements presenting, within three weeks after labor, a fatty degeneration, together with the same dimensions which are found in the fibres of the virgin uterus. Some of the muscular fibres are, probably, completely absorbed.”

“The changes which I (Kölliker) have described as occurring in the muscular elements of the pregnant human uterus have also been observed by Kilian² in mammalian animals, and, like myself, he has seen both an enlargement of the already existing elements and a formation of new ones. On the other hand, we do not entirely agree as to the manner in which the diminution of the muscular tissue, after parturition, takes place. Kilian saw, as I did, the formation of drops of fat in the contractile fibre-cells; but, on the other hand, he did not see, in animals, the remarkable shortening of the fibres which I have described. He (Kilian) believes that the old muscle fibres disappear entirely, and that new ones come in their places; he has seen this occur in bitches.³ In human beings, I have thus far seen nothing of this character, and even if I cannot

¹ Mikroskop. Anatomie, ii. Bd. 2 Hälfte, 1854, S. 440, u. ff.

² Die Structur des Uterus nach der Geburt, 1852.

³ l. c. ii. Artikel S. 18, 35.

demonstrate that all the muscular fibres of the pregnant uterus, including those which are formed during pregnancy, are diminished in size, it is still my belief that the greater number of them are not destroyed, and that they even persist through more than one pregnancy. Such a condition seems not at all improbable to my mind, for the uterus, after parturition, will always remain more voluminous than the virgin uterus.

"I should think that the foregoing statements must also apply to animals, and the total regeneration of the muscular elements which Kilian affirms, seems to me improbable in the highest degree, the more since such a process is not to be thought of as appertaining to the vessels and nerves of the organ. Schwartz also concludes from his observations that new muscle strata are formed in the uterus during pregnancy, and that their seat of election is at the fundus and in the innermost layers of the organ. Since the length of the contractile fibre-cells in the virgin uterus, and in the pregnant organ, at the sixth month, shows the ratio of 1 : 7 — 11, and the breadth 1 : 2 — 5, it cannot be doubted that this enlargement is sufficient to account for the increase in the size of the organ, both in its longitudinal and its transverse diameters, at the sixth month, and partly for its increase in weight. After that period the elements appear to stop growing, and the volume of the organ also increases no more; any apparent increase in size would then be explained by a stretching and change of position of the elements."

The views of Kölliker upon this subject are quoted far less frequently than those of Heschl, and this is readily understood, for the former are not expressed in such definite terms as the latter. Charpentier¹ had so imperfect a comprehension of the case as to class Kölliker among the followers of Heschl; while Tarnier and Chantreuil² indicate correctly Kölliker's position in regard to this question. In the German text-books upon obstetrics the author failed to find any particular reference to Kölliker in this connection.

(3.) While Heschl argues in favor of the complete, Kölliker in favor of the partial destruction of the muscular tissue of the puerperal uterus. Luschka³ denies that such a process exists at all. His opinions are as follows:—

"The increase in volume of the uterus is caused by an enlargement of its histological elements, and by a new formation of the same, especially the muscular fibres. New formation of contractile fibre-cells occurs only during the first half of pregnancy, and chiefly in the inner layers of the

¹ *Traité prat. des accouchements*, Paris, 1881, Tome I., p. 532.

² *Traité de l'art des accouchements*, Paris, 1882, p. 757.

³ *Anatomie des Menschen u. Bd. ii. Theil. S. 105, u. ff.*

wall of the uterus, where young round cells, from one one hundredth to eighteen thousandths of a millimeter in diameter, in the course of gradual conversion into spindle-cells, are never wanting. If the exuberant development of the organ, which is so insignificant in size previous to conception, into the enormous proportions of the uterus at term, may be regarded as a true "miracle of nature," so may our admiration be not less excited by the restoration of the organ, emptied of its contents, to the dimensions which it previously had. Aside from the contraction of the evacuated uterus upon itself, its diminution in volume is chiefly due to a change in the muscular structure. In a relatively short time, as a rule at the end of four weeks, the greater number of the contractile fibre-cells have resumed their original size. With this process of involution is associated a development of fat in the muscle-cells, which is manifested within a few days from the termination of labor by the presence of the finest molecules of fat in the homogeneous substance surrounding the nucleus. These molecules subsequently increase in size and then gradually disappear, but in such a way that it is impossible to explain with exactness their disappearance from the cells, which gradually become smaller."

This simple theory of Luschka's has remained entirely unappreciated, because it was hidden away, as it were, in his text-book on anatomy, and gives no further intimation as to the particulars of the investigations which resulted in his opinion, which is thus briefly communicated. I was not aware of it myself when I undertook my investigations which led me to quite similar conclusions. Subsequently, when looking up the literature of the subject, I first became aware of it, and also made the discovery that Robin¹ had expressed himself in terms similar to those of Luschka.

(4.) The most recent theory in this series concerning the nature of involution of the muscular structure of the uterus during the puerperium is that which has been enunciated by Meola,² who transfers the point of importance in the processes under consideration to the intra-muscular connective tissue. From an anatomical investigation upon four puerperal uteri, Meola came to the following conclusions:—

(1.) "In the uterus, at an advanced period of pregnancy, one finds much connective tissue, which forms sheath-walls around the muscle-fibres between the separate muscle bundles and trabeculæ.

(2.) "This connective tissue develops during the puerperium, changes from the embryonal to the mature form, and is intended, at first, to secure nourishment to the muscles, and subsequently to effect their atrophy.

¹ Archiv. gén. de Méd., etc., 1848; also in the Mém. de l'Acad. de Méd., 1861; it is quoted by Charpentier.

² Il Morgagni, 1884, Jan. to Apr. Also, Centr. f. Gyn., 1885, Nr. 1, S. 10.

(3.) "In the uterus, at an advanced stage of pregnancy, there are usually changes in the walls of the vessels, consisting of thickening in the *media* of the arteries and swelling and proliferation of the *intima* of the veins.

(4.) "The process of involution should be considered a simple granular atrophy, and not, as has heretofore been believed, a fatty degeneration of the muscle elements with subsequent absorption.

(5.) "The hypertrophy of the connective tissue is the cause of the atrophy of the muscular fibres."

So far as I know there have not yet been any critical analyses of Meola's theory, at least to any extent. Neither am I aware that his promised complete work upon the subject has as yet appeared. Considerations, which were originally of a clinical character, induced me to investigate the question of the changes which take place in the uterine muscle during the puerperium. In the course of my studies upon the suture of the uterus in the Cæsarean section, I was obliged to consider the question whether the uterine wound, in view of the degenerative changes which occur in the course of the puerperium, could heal by first intention. If the uterus underwent degeneration by fatty changes, and was not regenerated until the third or fourth week of the puerperium, as is taught by the prevailing doctrine, it was to be feared that a permanent primary healing of the uterine wound could not take place. I had had the good fortune, however, to observe that such union did take place, for in a case in which the Cæsarean section had been performed, partial reopening of the abdominal wound occurred. Through this opening I was enabled to convince myself of the complete primary union of the uterine incision, and to remove all the silk sutures which had been introduced to secure it.¹ This was the motive which suggested my anatomical investigations as to the processes of degeneration in the puerperal uterus, which were undertaken at first only with reference to the primary union of wounds in the organ when in that condition. I soon reached the conclusion that the theory of Heschl could not be correct, not only because it regarded as an impossibility the primary union of a wound of the puerperal uterus, which uterus it regarded as undergoing complete dissolution, but also because the very first investigations which I made upon puerperal uteri taught me conditions which were quite at variance with Heschl's theory. These harmonized with the views which had been enunciated by Luschka and Robin, as I afterwards learned, and concerning which I contributed a short communication to the meeting of the Association of German Naturalists and Physicians at

¹ Der Kiserschnitt bei Uterushämomen, u. s. w., 1882, Leipzig, W. Engelmann, S. 37.

Eisenach.¹ In company with Dr. John Petzholdt (now of Gröditz, in Riesa, to whom I suggested this subject as a theme for an inaugural dissertation) these investigations were further prosecuted, and I believe that they have now been brought to a satisfactory termination.

The uteri which were utilized for investigation were, with three exceptions, specimens preserved in alcohol. The most of them were received from Prof. Ahlfeld, to whom I would here extend my sincere thanks. Most of them had been in alcohol for a long time, which had caused the solution of the drops of fat within the muscular fibres, and this made them quite suitable for microscopical examination, and also made it quite evident that fatty degeneration affects only a relatively small portion of the cell protoplasm, leaving the form and contour of the muscle-fibres quite intact at every stage of the degenerative process. In a few of the specimens the fatty degeneration was quite extensive, and was probably the result of pathological conditions. It is not necessary to explain in detail why section preparations are not suitable for the study of the processes which take place within the fibres and fibre-bundles of the muscular structure, although such preparations can also demonstrate that destruction of the muscular fibres of the puerperal uterus never takes place. The only method of investigation, which is suitable, consists in the isolation of the muscle-fibres by maceration. In that way alone is it possible to follow up the changes in the form and size of the fibres, to determine the measurements of their length and breadth; to compare them with one another in the different phases of degeneration, and finally to fix the microscopical image by a drawing. Different methods have been recommended for the isolation of smooth muscular fibres:² maceration in 20 per cent. nitric acid; in 20 per cent. hydrochloric acid; in 2 to 5 per cent. acetic acid; in 30 to 35 per cent. potash lye; in 10 per cent. chloride of sodium.

Reichert and Paulsen's method of maceration, in nitric acid, proved most satisfactory in my hands. A 20 per cent. concentration, however, did not seem to dissolve the intermuscular cement substance of uteri which had been for a long time in alcohol; and it was not until a 30 per cent. solution of nitric acid was used, with maceration, for one or two days, that sufficiently small fragments were obtained. After that, the breaking up of the fragments and isolation of the muscle-fibres became an easy matter, as well as their measurement by means of an ocular-micrometer. By the use of a Hartnack microscope with an ocular II., and an objective VII., a linear

¹ Arch. f. Gyn. Bd. xx., H. 2, S. 306.

² See Frey, Das Mikroskop und die mikroskop. Technik. 6 Aufl. 1877, S. 200, and Krause Anatomie 1 Theil, S. 96.

enlargement of 240 diameters was obtained, and one division of the ocular micrometer in the tube, when drawn out, corresponded to 2.6 mm. (Micra) in an objective micrometer. The drawings (see Plates I., II., III.) were on a scale of enlargement of 300 to 320 diameters. The investigations included the examination of seventeen uteri, two of them being normal, unimpregnated organs of women who had borne children; two at the sixth and eight months, respectively, of gestation, and twelve puerperal. The latter represented the following stages of the puerperium:—

1	.	.	.	.	.	.	.	4 hours	<i>post partum.</i>
1	.	.	.	.	.	.	.	6 "	"
1	.	.	.	.	.	.	.	3 days	"
1	.	.	.	.	.	.	.	4 "	"
1	.	.	.	.	.	.	.	8 "	"
1	.	.	.	.	.	.	.	9 "	"
1	.	.	.	.	.	.	.	13 "	"
2	.	.	.	.	.	.	.	16 "	"
2	.	.	.	.	.	.	.	35 "	"
1	.	.	.	.	.	.	.	55 "	"

In addition there was one specimen in which pregnancy had been present in the rudimentary horn of an *uterus bicornis*, the muscular fibres of which showed peculiar conditions.

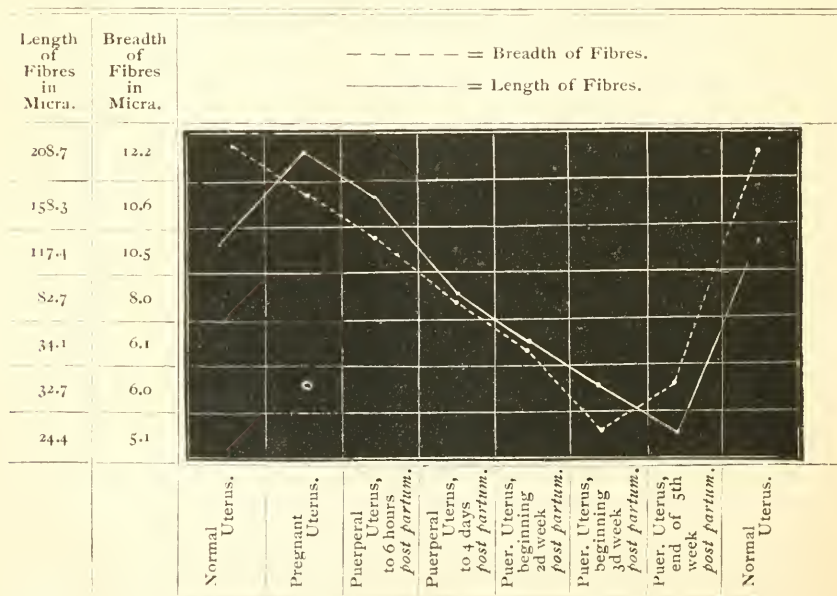
I appreciate the fact that my material for this investigation is not abundant, this being one of the happy results of our antiseptic era; also that it shows gaps for certain stages in the period of involution; but it is entirely sufficient for the purpose of my argument. I wish particularly to state that not one of the puerperal uteri which were examined showed disease of the muscular tissue, although death resulted in several cases from puerperal wound infection. As Heschl, Spiegelberg, and J. Williams have shown, puerperal degeneration is influenced slightly, if at all, by the last-mentioned cause. It must be added, however, that the process of fatty degeneration appears to be more pronounced in such cases, probably in consequence of the influence of high body temperature.

The following table¹ represents the averages with respect to the length and breadth of the muscular fibres:—

¹ In the original there follow here 16 tables, showing all the measurements in each case. These are omitted with consent of the author, as the averages are summed up in the next table.

			LENGTH.		BREADTH.		RATIO.
I.	Uteris	Normalis					
II.	"	"	31.1	29.9 μ .	5.1	14.4 μ .	6.7
III.	"	"		38.3		5.7	6.7
IV.	"	gravidæ, VI. Men's	208.7	244.1	10.5	11.9	10.8
V.	"	VIII. "		172.6		9.1	19.2
VI.	"	4 hours <i>post partum</i>	158.3	145.1	12.2	13.6	12.8
VII.	"	6 " " "		171.6		11.5	14.9
VIII.	"	3 days " "	117.4	122.2	10.5	11.7	11.3
IX.	"	4 " " "		112.5		9.4	12.1
X.	"	8 " " "	82.7	95.9	8.0	9.2	10.4
XI.	"	9 " " "		69.4		6.7	10.4
XII.	"	13 " " "		64.1		6.7	9.5
XIII.	"	16 " " "		33.5	6.1	6.3	5.4
XIV.	"	10 " " "	32.7	31.0		5.9	5.5
XV.	"	35 " " "		23.4		5.8	4.0
XVI.	"	35 " " "	24.4	25.1	6.0	6.2	4.0
XVII.	"	55 " " "		17.4		4.7	3.8

From the foregoing table it is very evident that the muscular fibres of the uterus steadily diminish in length and breadth during the period of involution. With regard to the diminution in the length of the fibres, it amounts, according to the foregoing table, during the first few hours *post partum* to about one-quarter of the fibre length in the pregnant uterus. The further, proportional loss in length is best explained by a comparison of the successive groups of figures in each of the columns, and by the accompanying curve.



Fibre length in the pregnant uterus	268.7 μ
" " in the first hours <i>post partum</i>	158.3
" " to the fourth day of the puerperium	117.4
" " in the first half of the second week puerperium	82.7
" " in the beginning of the third week "	32.7
" " at the end of the fifth week "	24.1
" " of the normal uterus	34.1

The loss in breadth shows somewhat different relations. During the first few hours *post partum* there is an increase in breadth, and the subsequent diminution proceeds at a slower rate than does the shortening in the length of the fibres, as may be seen by the following figures and the curve:—

Fibre breadth in the pregnant uterus	10.6 μ .
" " first few hours <i>post partum</i>	12.2
" " to the fourth day <i>post partum</i>	10.5
" " in the first half of the second week	8.0
" " at the beginning of the third week	6.1
" " at the end of the fifth week	6.0
" " of the normal uterus	5.1

The greatest loss in breadth, as well as the greatest loss in length, occurred during the third week *post partum*. That the index of length of the fibres after complete involution is less than that of the normal uterus harmonizes with the well-known fact that the entire uterus, especially in nursing women, is often smaller at that time than is normal; in other words, there is a physiological *post partum* superinvolution or atrophy of the uterus. This disturbance of nutrition occurring in connection with relative anemia of the organ, with the so-called lactation amenorrhœa, finds its suitable expression, therefore, in the microscopical relations of the individual muscle-fibres. I did not have an opportunity to determine by isolation and measurement of muscular fibres, and by comparison of the resulting figures, the relations which obtain in *post partum* subinvolution of the uterus, the condition which is the opposite of involution. This pathological form of degeneration of the puerperal uterus, which exists in connection with hyperæmia from stasis, never occurs in healthy woman nor in healthy sexual organs, but only in connection with disturbances of the general system, especially those which appertain to circulation and respiration, and in connection with local diseases of the pelvic organs themselves, especially parametritis, pelvic

peritonitis, retroflexion, prolapsus, etc. It depends, in particular, upon a delay in the process of involution, which would be indicated, without doubt, by measurements of the individual muscle-fibres. The index of length and breadth of the fibres will correspond, in this condition, in the later weeks of the puerperium, with that of the first weeks. I feel quite justified in making this statement in view of the complete harmony which exists between the clinical relations of the normal puerperal uterus with its gradually diminishing volume, and the anatomical, exactly measurable relations of the individual muscular fibres; a harmony which has its justification in this accurate proportionality which has been demonstrated, and which is one of its strongest evidences of correctness, as well as of the correctness of the conclusions which are deduced from it. Decided transverse and longitudinal formations of ridges or folds can also be demonstrated in the individual muscular fibres of the fresh *post partum* uterus (see Figs. 3 and 4) as an illustration of the retraction and contraction of the entire organ. With the proof of gradual diminution in the size of the muscle-fibres of the uterus until the normal is reached, it is also proven, *eo ipso*, that there is no such destruction of tissue as Heschl and Kölliker teach. With regard to the preservation of the muscular fibres of the puerperal uterus, Luschka and Robin have maintained the fatty degeneration of the parenchyma of these fibres has only the significance which attaches to processes of internal tissue change, which might be designated dystrophic or paratrophic. Such processes do not in any way hinder a subsequent progressive cell activity; they do not prevent the capacity of the muscle-cells for proliferation, but permit the healing of a wound which involves them as readily as is permitted in other organs with a smooth muscular fibre structure. After the removal of the fat drops by which the puerperal muscle-fibres are swollen out (and to their presence is probably due the relatively slower diminution in breadth of the fibres, as will be seen by the foregoing table), it also becomes evident that the degree of fatty degeneration which has taken place is not extensive. When Olshausen¹ assumed that the cause of the retardation of the pulse during the puerperium was an absorption into the circulation of the fat molecules from the degenerated muscular fibres of the uterus that is a kind of lipæmia, he stated only an hypothesis, as he himself admitted. There have been no positive investigations showing that the quantity of fat in the blood of puerperal women is increased, nor that it comes directly from the uterus in the form of fat drops. The fat embolism so often found by E. Wagner in puerperal women is explained by the absorption of fat from sloughing fatty

¹ Centr. f. Gyn., 1881, No. 3, S. 49.

tissue. The quantity of fat derived from the puerperal uterus, when compared with that which is obtained from the digestive tract, would be found to be very small. Furthermore, the investigations of Otto Nasse and of Wiener, with reference to the volume of fat molecules in the urine of puerperal women, were of negative import. The statement that these molecules came from the muscular fibres, and in that form were taken up by the blood and lymph, rests upon an opinion which rests upon the irrelevant type of the method of fat resorption by the intestine. *Fatty detritus is never found on the outside of the muscle-fibres.* Furthermore, the burning up of the fat molecules occurs only within the cells themselves, and only the product of their disintegration and oxidation can get into the blood. Together with the fatty degeneration of the muscle-fibres, in which the nuclear matters probably participate only to the degree in which there is diminution in size of the whole mass of the individual fibres, there is, in addition, without doubt, a direct oxidation of molecules of protoplasm without the intervention of any process of fatty degeneration.

I believe this has been decided by the discovery of a finely granular cloudiness, which I was able to make out in numerous fibres, which had been deprived of their fat. Benecke¹ also has shown that in the hypertrophied smooth muscular fibres of the puerperal uterus a metamorphosis may occur, which is similar to the waxy degeneration which takes place in striated muscular fibres. Probably such a change took place in the fibres which are represented in Fig. 5. That hyaline degeneration may be converted into fatty degeneration, that it usually is so converted, is well known. To what extent *post mortem* changes may give to the muscular fibres a glazed appearance resembling waxy degeneration cannot be accurately said, but such conditions may result. After the removal of all products of disintegration we still have remaining the same muscle-fibre, which only goes through a kind of *moulting process* in order to return to its previous, yes, to a more vigorous fullness, to its previous, constant, but deliberate routine of tissue changes, after it has reached the extreme degree of puerperal diminution, which has reduced it to a size somewhat smaller than the normal muscular fibre of the uterus.

I must now mention the extraordinary discovery which I made in the course of the investigation of the muscular structure of a rudimentary impregnated horn of an *uterus bicornis*, which was amputated nine weeks after the death of the foetus which it contained, which had lived until the seventh lunar month. *The muscular fibres in this*

¹ Zur Lehre von der hyalinen Degeneration der Glatten Muskelfasern, Virchow's Arch., Bd. XC., Heft 1, S. 71.

case showed the same smallness in dimensions as is seen at the end of the period of involution. (See Plate III., Fig. 15.) A series of energetic contractions, lasting about twelve hours, had taken place, and in the weeks which followed the rudimentary horn of the uterus had become decidedly smaller. No other conclusion could be reached than that *the degeneration of the muscular tissue took place at the time of the death of the fœtus, and completed its termination without the evacuation of the cavity which contained the fœtus.*

I had no opportunity to employ this important observation in other cases of uterine lithopædion (from missed labor) and extra uterine pregnancy; but I do not doubt that they would show similar conditions.

There are yet other grounds which may be considered in opposition to Heschl's theory of the complete, and Kölliker's of the partial, annihilation of the puerperal muscular fibres. It would, in fact, be a natural wonder if the puerperal uterus should completely disappear, not fibre by fibre, and stratum by stratum, but "by a progression from the outer layers inward," and that by a kind of oppositional growth a reconstruction of the uterine muscle, woven together in so extremely complicated a manner, should take place. These apparently newly-formed muscular fibres which were found by Heschl in the outermost layers of the uterus, are really nothing but fibres which were reduced in size, or, at all events, newly formed in the course of pregnancy.

Furthermore, such a high degree of fatty degeneration as presupposes the destruction of puerperal muscular fibres must far exceed the physiological limit. The puerperal uterus, when it has reached the highest degree of its fatty change, is, moreover, quite comparable with the physiological fatty liver, which can be relieved of its fatty contents after a short time without loss of the cells of its parenchyma. According to Heschl's theory it would be necessary to compare the process with that of acute yellow atrophy of the liver. I have already shown that with the presupposed general fatty degeneration of the muscular tissue of the puerperal uterus the matrix of the young aftergrowth must also be destroyed. Upon this theory Spiegelberg's "embryonal muscle-elements," which arise only in the course of pregnancy, must also be irrecoverably destroyed instead of being developed. In regard to this matter Virchow¹ long since showed that the theory of embryonal muscle-elements was false, and that new muscle-fibres could only originate by the division of and sprouting from old ones. Such a new formation of smooth muscular fibres, however, as Kölliker admits, has never been demonstrated for the pregnant uterus, and Heschl is silent as to the source from which

¹ Gesammelte Abhandlungen, 1856, p. 777.

the "nuclei and cells which are drawn out like fibres" can come. Therefore, also Kolliker's assumption that the newly formed fibres of pregnancy have become useless at the puerperal period, and in their turn disappear, stands upon a weak foundation. One would expect the contrary, as Spiegelberg does, that they would be preserved, while the old muscle-fibres were destroyed. Neither can this be understood why tissue elements which are identical in character should act differently toward a process of general retrograde metamorphosis, and some of them be entirely spared from participation in it.

A few words may be added in regard to the theory of Meola. Its leading idea consists in placing the physiological involution of the puerperal uterus on the same plan with granular atrophy, a pathological process which presupposes an inflammation, as is the case, for example, in cirrhosis of the liver and contracted kidney. It gives to the connective tissue an active part which it cannot fill, owing to the nature of the entire subject of puerperal involution, with the enormous loss in volume of all the tissue elements which is inseparably connected with it. The hypertrophy of the intermuscular connective tissue is only apparent, inasmuch as it is only somewhat more prominent in connection with the physiological atrophy of the muscle-fibres. Upon this subject Bernstein, in direct opposition to Meola's teaching, has shown that both the fibrous and the cellular elements of the intermuscular connective tissue undergo constant loss in the course of puerperal involution.

This is all I have to say. If the simplicity of a theory is a surety for its correctness, then I believe that this doctrine, which I have developed in regard to the nature of the degenerative changes in the muscular tissue of the puerperal uterus can rightly claim it; and, in conclusion, it may be presented in the form of the following propositions, affording me an opportunity of adding also certain deductions which flow from it:—

(1.) The involution of the muscular tissue of the puerperal uterus is begun, as a result of the performance of an increased volume of work, in addition to great activity in the tissue changes during parturition.

(2.) Retraction and contraction of the entire uterus, after parturition, signifies retraction and contraction of individual muscular fibres; the expression of which is to be found in the shortening and broadening of the muscle-spindles, with the formation of transverse and longitudinal ridges upon them.

(3.) A further disturbance in the equilibrium of the tissue changes in the muscular tissue of the puerperal uterus is caused by the cessation of the rich blood-supply which it enjoyed during pregnancy, that is, by a relative anæmia. These three factors—increased oxidation, continuous retraction

and contraction, and relative anæmia — lead to retrograde metamorphosis of the protoplasm of the muscular fibres (finely granular cloudiness, hyaline degeneration, fatty degeneration), and by an absorption of the superfluous protoplasm, cause, as a consequence, a gradual diminution and reduction of the muscle-fibres to the normal.

(4.) The fat globules which are formed within the muscle-spindles, and the other products of disintegration, do not enter as such into the circulation; but are oxidized in the place where they occur. There is no such thing as puerperal lipæmia.

(5.) Probably not a single muscular fibre is destroyed by complete fatty degeneration. The regressive changes within the puerperal muscular fibres, which may be denominated *para-trophic*, have for their object only the true involution of the muscular fibres until they have attained their earlier size and form. The definition of atrophy, as a pathological process, does not correspond with the physiological nature of these processes.

(6.) Any muscular fibres, which may be newly formed during pregnancy, must undergo similar puerperal para-trophy and involution, in proportion to the degree of development which they have reached at the time of parturition.

(7.) The intermuscular connective tissue experiences a similar involution in its cellular and fibrillar elements; thus it does not play any active part nor experience hypertrophy.

(8.) The increased size and weight of the uterus of a pluripara, compared with that of a nullipara, depends upon a certain permanent increase in the intermuscular connective tissue, which is not restored to the tenuity, density, and elasticity of the virgin state; and it also depends upon a certain permanent enlargement of the muscle-fibres. If there is also, during pregnancy, a new formation of muscular fibres, and this has not yet been positively demonstrated, the greater volume of the pluriparous uterus would then be explained by the absolute increase in the number of those fibres.

(9.) *Post partum* subinvolution of the uterus is not an independent disease, but a prolonged and incomplete involution, which is disturbed in its progress, and is dependent upon changes in position, disturbances in the circulation, and inflammations of the uterus and its surroundings.

(10.) By *post partum* atrophy of the uterus is signified a diminution in its size which brings it to the boundary line of the pathological, so that its volume may sink manifestly below that of the normal pluriparous uterus, this being conditioned upon an abnormally great reduction in the muscular fibres and the intermuscular connective tissue, with an anæmia of

the uterus, the sexual organs in general, or the entire body, as a probable fundamental cause. In physiological cases the nutrition improves, the increase in the volume of the uterus is continued until the normal is again reached, and menstruation returns as a regular and uninterrupted function. In pathological cases the uterus remains permanently atrophic with the continuance of oligomenorrhœa or amenorrhœa.

(11.) In cases in which the fetus dies, involution of the uterus begins before the fetus is delivered. In cases in which delivery is impossible (as in the case which has been cited in which there was pregnancy in a rudimentary horn of a bicornate uterus), all degrees of puerperal involution can be perfectly accomplished, the same as in a normal puerperal uterus.

(12.) Wounds of the puerperal uterus (such as the wounds made by Cæsarean section and ruptures) heal, under favorable conditions, by first intention, as readily as wounds in other organs.

VASO-RENAL CHANGES AS A FACTOR IN CAUSATION OF STILL-BIRTHS.¹

BY DR. E. P. CHRISTIAN, WYANDOTTE, MICH.

THERE are other considerable causes of still-births besides dystocia, ergot, and syphilis. These three are generally regarded as the principal causes; and it is almost certain that the last two are also held responsible for many still-born children for whose deaths they have been in no way answerable.

To illustrate, permit me to cite the history of a recent case, fresh in memory, not as a case coming within the scope of the title and subject of this paper, but as an example of many which could be cited to show how easily a mistaken judgment may be formed as to the cause of death in such cases.

I was called to attend, by previous engagement, Mrs. C. in her third confinement; having delivered her in her two previous labors, by forceps, with safety to mother and child, after somewhat tedious and painless labors. The patient had been in powerless labor all night, when I was summoned at 2 A.M., and arrived just as the babe was born and to see her husband's brother, Dr. C., who lived in the same house and who had been hastily called in from his room, making ineffectual attempts to excite inspiration in the just extruded infant. The cord had not yet been cut — there had been no prolapsus of the cord. I felt of it, — it was flabby, cold,

¹ Read before the Detroit Gynecological Society, April 7, 1881.

and pulseless. The child was purple, but yet warm. The doctor stated that he had just come into the room; that the patient had had no pains until just before he came in, when she had one, as she expressed it, of agonizing severity which seemed to tear her side, and that he had just got to her as the head emerged with a second pain. The child was dead, past all efforts at resuscitation, and the doctor was chagrined as well as puzzled. While he was giving his attention to the child with continued efforts at resuscitation, I gave mine to the mother. I found the placenta loose, presenting at os uteri, and its extrusion was followed by a mass of clots sufficient to fill an ordinary chamber-pot, besides some of the fluid portion which had soaked in the bedding. The funis not exceeding fifteen inches in length, — there could have been no prolapsus with this brevity, — and the child born purple but warm, showing it to have been not long dead.

Now here was a powerless labor, rendered so probably by the short funis attached to the placenta dragging upon and counteracting the contractions of the attached portion of uterine walls; when, as the head began to emerge and was receiving the force of the contracting posterior perinæum, the placenta was torn from its attachment, and before another pain came on the child was lost, asphyxiated. The evidence was complete; the character of the labor, the tearing pain at the last, the detached placenta, the uterus full of clots, and the asphyxiated still-born child, — without any other possible cause, not even ergot or syphilis as a scape-goat.

Here was a powerless labor progressing in which ergot would have been indicated, and in which, had a physician been called early, it would probably have been given; and had it been given, and with the same termination, it certainly would have received the blame.

The only course which could have saved this child would have been that the physician, having been called sufficiently early, and having detected the condition and danger, should have applied the forceps so soon as the os was dilated and the head sufficiently low, and have delivered at once as in her previous labors.

The case may seem irrelevant to the scope of the paper as indicated in its title, but is given because fresh in memory by reason of recent occurrence, and as an illustration of a fact which the paper is also designed to point out; viz., that there are other considerable factors in the causation of still-births besides ordinary cases of dystociæ, syphilis, and ergot, and that the last two of these causes are at times unjustly charged with the causation of still-births for which they are in no way responsible.

Among these causes I design more particularly at this time to consider vaso-renal changes as a factor, and in this class, as the most prominent one, I propose to give an analysis and history of my cases of

puerperal eclampsia, a large proportion of which, and of all such cases, may presumably be embraced in this class. These cases are ordinarily considered under the head of one form of dystocia, and a certain proportion of the still-births in these cases are without doubt due to other complications of labor than either the albuminuria or the eclampsia. Still the proportion of still-births in these cases due directly to hæmic alterations in the mother from the deranged urinary functions, as causing deranged urinary secretions, or indirectly due to deranged placental circulation from the same cause, embraces a large percentage of all the cases.

The cause of these vaso-renal changes, leading in some cases to albuminuria and in others to other disordered renal functions, in pregnancy, is a subject enveloped as yet in a great degree of obscurity. And yet the suggestions which may be advanced as regards the condition amount to something more than mere speculation. Dr. Fothergill has showed how these vaso-renal changes culminating in the various manifestations of gout, Bright's disease, etc., have their beginnings in deranged hepatic function, and this from digestive derangements.

May we not find, then, in the increased demands made upon the digestive organs of the mother in gestation for the supply of the means of development and growth of the fetus, one probable cause of these changes?

Dr. J. E. Kelley, F.R.C.S.I., M.R.I.A., in a paper read before the Section of Obstetrics in the thirty-eighth annual meeting of the American Medical Association, and published in the journal of the Association for Dec. 3, 1887, entitled "*Lithiasis in Pregnancy*," gives us some most interesting and suggestive ideas on the subject. From this paper I shall take the liberty of making some short quotations bearing upon the subject more or less directly in its relation to still-births. Says he:—

"If we now turn our attention to the phenomena of pregnancy, we cannot fail to observe a remarkable coincidence between the diseases as well as the pathology of that condition and lithiasis. All these features to which I have alluded when reviewing lithiasis are frequently seen in pregnancy. The structural changes which are present in the former are of common occurrence, and the physiological conditions of gestation are favorable to its development. In the etiology of the two classes of diseases the parallel is sustained, as in both we have the same hæmic influences, the same irritable or explosive state of the nervous system, and the same renal and digestive disturbances." And again:—

"The conditions of the maternal blood in gestation is in keeping with the physiological relation which exists between the mother and the development of the fetus. The cell-changes of the composite animal

are increased proportionally with the growth of the fœtus and the containing uterus. The fœtal organs, with the exception of the heart and liver, are practically inert, and the double duty is imposed on the corresponding maternal organs. The medium through which these additional functions are performed is the maternal blood, and consequently the quantity of the nutritive and the excretory substances conveyed are necessarily increased, and, owing to the greater constructive and metabolic energy exerted during the process of development, increased most probably more than in the ratio of the utero-fœtal mass to the mother. The chief nutritive and excretory matters circulating in the blood are nitrogenous and inorganic, and consequently are conducive to the development of lithiasis as well as puerperal septicæmia, eclampsia, peritonitis, and thrombosis." And again: —

"The hepatic disturbances are additionally interesting, owing to the weight of evidence which has been adduced to convict the liver of being the chief offender in the production of lithiasis. There is undoubtedly more than a causal (casual?) relation between pregnancy and hepatic disturbance as is evidenced by the frequency of pigmentation and jaundice, acute yellow atrophy of the liver, a disease which is associated with gestation with significant frequency."

In such statements and suggestions we have the explanation of many of the phenomena presenting in gestations and parturitions resulting in still-births, and the evidence that there is more than a casual connection between vaso-renal changes in the mother and the consecutive accident of a still-born fœtus.

Probably the most frequent of still-births from this cause are consecutive to albuminuria in the mother; and I here present a history and analysis of the cases of puerperal eclampsia occurring in my practice, — not only those associated with albuminuria, but from whatever cause: —

CASE I. — Mrs. W., Irish, ninth gestation, at full time. Died undelivered without indications of labor. Went into convulsions, in which state I was called to her, and consequently had no opportunity of examining urine. She became comatose and never revived. Probably was albuminuric, as she had convulsions, as I learned, in her first and fourth labors.

CASE II. — Mrs. R., French Canadian, first labor, at full term; child delivered dead by forceps; woman apparently improved, but died afterwards of peritonitis.

CASE III. — Mrs. G., French Canadian, second. all previous and subsequent labors natural. Had convulsions twice between seventh and ninth month. Went to full time, and delivered without accident to mother or child.

CASE IV. — Mrs. L., American, fourth. Post partum convulsions proved fatal to mother ; child living. No opportunity of testing urine.

CASE V. — Mrs. S., German, second. Convulsions at seventh month ; went full time, and delivered without further accident safely to mother and child. Urine highly albuminous. Woman stated that she had convulsions in her first labor.

CASE VI. — Mrs. McG., sixth labor, Irish, very stout. Post partum convulsion, bled freely, and patient recovered rapidly ; child all right. This woman, some years after, fell dead in an apoplectic fit. I never detected albumen on trial, but woman presented general indications of it, and no doubt had some form of vaso-renal trouble.

CASE VII. — Mrs. M., Irish, eighth, stout, full-blooded woman. Post partum convulsion, bled freely ; woman quickly recovered, and is yet living and healthy, and the child now at age of seventeen.

CASE VIII. — Mrs. T., American, also very stout woman, second labor, first labor fifteen years ago ; labor at term terminated safely to mother and child, though patient had repeated convulsions for twenty-four hours before termination of labor. She also was bled freely. Urine highly albuminous, probably chronic Bright's disease, as in a succeeding pregnancy it was deemed advisable, on a consultation, to bring on a miscarriage at fourth month, so threatening were the symptoms already presenting. The woman left the place afterwards, and I know nothing of her subsequent history.

CASE IX. — Mrs. T., American, eleventh ; also a very stout, plethoric woman. She was seized with a convulsion at third month, which left a partial paralysis for some time ; was freely bled, and recovered and went to full term, and was safely delivered. This patient's urine was albuminous, as a rule, in her pregnancies, and she was, as a rule, freely bled for intense headache and other threatening symptoms, and in one gestation was bled at third, and again at seventh, month. After having borne twelve children she discontinued the practice, some years since, and is living in as good a state of comfort as could be expected of one carrying some three hundred pounds avoirdupois.

CASE X. — Mrs. D., American, second ; died on second day after delivery, of suppression of urine and coma. The case was seen in consultation. Child was still-born.

CASE XI. — Mrs. W., American, third ; a woman very much broken down, which condition had been attributed to frequent abortions, with severe hæmorrhages, and which may have been either the cause or the sequence of chronic albuminuria, for which, in an aggravated form, the woman was under treatment when taken with convulsions and labor at

seventh month. The labor was terminated by forceps while the woman was unconscious. The child was dead, and the woman never came out of her stupor.

CASE XII. — Mrs. P., American, first; convulsions at seventh month; never came out of her stupor, and died undelivered, with no indications of labor. The case was seen in consultation.

CASE XIII. — Mrs. C., American, first; at full time. Labor progressed satisfactorily until completion of first stage, when, the os and perinæum being at greatest stretch and tension by occupation of the head, the woman suddenly went into a convulsion, as I supposed from reflex irritation, and the child was at once safely delivered by forceps. Albumen was afterwards found in large amount in the woman's urine, and after lingering some ten days she died of peritonitis.

CASE XIV. — Mrs. L., French Canadian, first; convulsions announced the commencement of labor. The labor was a very difficult one, aside from the complication of the eclampsia. A very short funis prevented the descent of the child, as was ascertained after delivery. The forceps was applied when the head was sufficiently low and the os dilated, and the child delivered dead, with the funis separated at the child's abdomen. The placenta was still very firmly adherent to uterine walls. The mother died comatose.

CASE XV. — Mrs. W., American, first; this was similar to Case XIII. Reflex convulsion at completion of first stage; forceps applied and woman delivered of living boy. Woman speedily recovered.

CASE XVI. — Mrs. H., German, seventh; similar to last as regards reflex nature, but labor complicated by breech presentation of a twelve-pound child. Labor terminated by forceps to after-coming head with safety to mother and child.

To generalize from a small number of even so comparatively rare an accident of gestation as eclampsia would be unprofitable, and especially so in one presenting such a variety of aspects and relations as this one, which may present the most profound uræmic intoxication as its obvious cause, and again no apparent functional urinary derangement, but merely an explosive irritability of the nervous system, which may prove fatal to mother and unborn offspring in an unretarded and otherwise uncomplicated labor, and again from which, with the most serious complications, both emerge with safety. Yet, if not to generalize, it may be permissible to study the points of interest connected with the cases. This, fortunately, is adjudged one of the rarer complications of gestation, though, like others, presenting great differences in the experience of leading accoucheurs.

Cazeaux, in more than two thousand cases, at Hotel Dieu and La Charité, met with but three cases; Velpeau, in one thousand accouchements at La Clinique, not one case.

"Statements furnished by Madame Lachapelle, Merriman, Ryan, Pacoud De Bourg, and others give about one case in two hundred deliveries," "and collected experiences of principal accoucheurs of Europe give about one in four hundred and eighty-five." Churchill's statistics give one in six hundred and eighteen and three-fourths.

My own experience has been one case in one hundred and six gestations carried past six months. Though this statement affords no criterion of its relative frequency to all labors, for the reason that I have probably seen most of the cases, for quite a number of years at least, which have occurred in my vicinity, whereas I have seen but a comparatively small part of the labors which have occurred within the same time and territory, and a true criterion of the ratio could only be had by knowing how many labors had occurred. Herein lies one of the fallacies of generalizing, in judging of the relative proportion of the various accidents of labor occurring to any private practitioner from the proportion to his own obstetric cases. These are the cases to which the physician is summoned by the midwives and women attendants, while the normal and uncomplicated cases attended by them are not taken into account.

From the reports of the cases it will be observed that the rate of mortality to the mothers has been large, as contrasted with modern medical journal and medical society reports, these latter usually showing but a small percentage of maternal mortality; though text-book authorities represent a proportion of from one in two to one in four and a-half. (Churchill.) Cazeaux says one-half the women are lost. The foregoing cases show a mortality of seven in sixteen, or nearly one in two.

Of these, in ten the convulsions preceded the labor, in one at third month, and in four at seventh, of whom two died; in three, convulsions occurred during labor; in three, convulsions occurred at termination of labor. Of the first ten, five mothers died; of the second three, one mother died; of the third three, one mother died.

Cazeaux says, "Convulsions are more dangerous at commencement of travail than when not manifested till dilatation of parts is so advanced as render spontaneous or artificial termination of labor both possible and easy;" also, that they are more dangerous at an early period of gestation, because complete obliteration of orifice and hardness and length of cervix make depletion of uterus difficult, — after delivery less unfavorable. As regards these cases, one had a convulsion at about third month, recovering from it on bleeding, and subsequently from consecutive partial paralysis.

and went to full time without further accident; and of the four in which they occurred before labor at seventh month, two went to full time without further accident.

Of the three cases occurring at an advanced stage of labor, and regarded as reflex, one died subsequently of peritonitis. Her urine was albuminous. The other two recovered so promptly that no examination of the urine was made. All three cases were promptly terminated by forceps, two while unconscious. The other was a breech presentation of a large child, and forceps was applied to after-coming head. The children were all living. One other case, after having recovered from the eclampsia and its immediate sequences, died afterwards of peritonitis. Dr. Churchill observes, "It is remarkable and not easily explicable that after the convulsions have ceased and labor is over there is a great tendency to abdominal inflammation. . . . Denman was the first, I believe, to point out this fact, which Dr. Collins and others have observed."

Of the three post partum cases, two were distinctly apoplecticiform in stout, plethoric women, and were promptly relieved by free venesection. The other case was of a spare, delicate woman, and the convulsions continued till her death. One of two who recovered, it has been noted, subsequently died, as was supposed, in an apoplectic fit.

Some writers have observed an apparent atmospheric influence in producing the disease, so that it assumes the character of an epidemic. (Duges.) As pertinent to this we may note that cases nine, ten, eleven occurred between November 5 and January 3, of same year, or within less than two months. All were fatal to mother and child, all with albuminuria. It will be noticed that this was at the cold season of the year, when those afflicted with disorders of the kidneys would be likely to suffer aggravations from suppression of the cutaneous exhalations and excretions; and ten of the sixteen occurred from October to February; three more in May, of which two were reflex; and but three of the whole number in the summer months, all of which last recovered. These facts would certainly seem to corroborate the opinion of an atmospheric influence in precipitating the explosion in those otherwise predisposed to the accident by vaso-renal changes and nervous excitability.

Of the sixteen cases only five, or less than one-third, were in first labors, in this particular showing as great a variance from the general experience and belief as in some other respects, but corroborating the statement of Dr. Rambotham, "that women with large families are equally or more liable to be assailed;" which statement, however, Dr. Churchill says, "is not borne out by numerical investigation, for of thirty-six cases

related by Dr. Merriman, twenty-eight were with first children, and of Drs. Johnston's and Sinclair's sixty-three cases, forty-nine were primiparae."

Of the sixteen cases, in six the children were lost; in two cases, however, the mother dying undelivered, so that there were in reality but four still-births. Dr. Merriman reported, of fifty-one cases, the child still-born in thirty-four or sixty-six, two-thirds per cent.

Counting the whole number lost would represent nearly eight per cent. of the whole number of still-births, in my practice, from this cause. But as the still-births in puerperal eclampsia by no means represent the total of still-births due directly to vaso-renal changes in the mother, the total of still-births from these causes would represent a much larger proportion, — perhaps double. The still-births in gestations accompanied with albuminuria not followed by eclampsia, as well as in forms of lithiasis, would largely augment the number.

Dr. Kelley, in the paper previously referred to, remarks: "It may be permissible to speculate upon the possibility of these conditions, which the foetal fluids would naturally share with the maternal blood, affording a clue to the etiology of some of those obscure cases of intra-uterine deformities and disease, as well as of congenital cardiac lesions and adherent placenta depending upon plastic and inflammatory changes of the serous and enveloping membranes of the foetus; also as to the influence of these inflammatory conditions in producing fatty and other degenerative changes in the placenta, with consequent results of early abortion, miscarriage; and still-born and putrid fetuses."

The still-born and putrid fetuses, from fatty and other degenerative changes in the placenta, would very largely increase the proportion of still-births to the total, even in those cases where syphilis as a cause must be excluded, and the consideration of this type would be an interesting subject of itself.

I have made reference to cases of still-births in albuminuric cases unconnected with eclampsia. I will illustrate by details of the histories of several comparatively recent cases, as examples to show how in all probability the two large factors, syphilis and ergot, have been ignorantly and unjustly charged with the responsibility, when the true cause was not apparent.

Mrs. R., a stout, robust-looking Irish woman, the mother of seven healthy children born without accidents, and the subject of no miscarriages, came under my care early in March, expecting her confinement early in April. Her history was that she had some chronic urinary trouble, also had been the subject of a chronic bronchitis and frequent attacks of asthma (emphysema?); had a wheezy inspiration at this time. Her

children had diphtheria some weeks previously, and she herself had sore throat and fever. On use of balsams, both the pulmonary and the renal trouble was bettered, probably the former also by the action on the kidneys. On March 14th she did her usual day's washing (by which she supported her family) : complained of her back that night, thought she had hurt herself by lifting a tub. The next day, had intense pain in the back, headache, vomiting, and unappeasable thirst. Temperature sub-normal, urine scanty, no albumen detected in it. No improvement from day to day, and on evening of 19th some indications of approaching labor; no water passed since yesterday, and none in bladder. Morning of 20th membranes ruptured. Waters dribbled away all day, os gradually dilating, and the next day the os had become sufficiently dilated to apply forceps, and deliver a still-born putrid fœtus. No urine had been passed, none secreted for thirty hours preceding termination of labor. Had felt no motion of child since four days previous. Vomiting and headache ceased on delivery, but there was entire suppression of urine, and the woman went into a stupor and died.

Mrs. D., a young woman of about 28 years, in her fourth gestation, came under my care Nov. 14. She regarded herself at about seventh month. This patient had consulted different gynæcologists and spent much of her substance, since the birth of her youngest child, 4 years of age, for the relief of a burning sensation in her back, which had been attributed to some uterine or ovarian trouble. She was at this time suffering with an aggravated attack of this pain, and with digestive troubles, vomiting of her food, headache, and a constant pain under the left shoulder. Temperature sub-normal, 97° . Examination of urine showed not only heavy deposits of phosphates, but a large amount of albumen. Under Hunyadi Janos water, acetæ potassæ, etc., albumen disappeared, vomiting ceased, appetite returned, the pain vanished, temperature rose to normal, and a general improvement ensued, excepting at times the burning sensation in the back and most of the time heavy phosphatic deposits.

Nov. 30th. — She had a severe rigor in the night, shaking for an hour. I arrived just as the chill was leaving her. Her temperature registered 106.2° . Sweating was already commencing. In half an hour temperature had fallen two degrees, and 8 A.M. it was down to 101° . I commenced giving her quinine, of which, however, she took but one dose (4 grs.), as labor pains came on very soon, and at 10 A.M., on my arrival, I was just in time to receive the child, which was born dead, but not decomposed. Very likely had been dead since the chill and the great rise of temperature in the night. Temperature at this time was again up to 103° , at 1 P.M.

was down to 101° , and next day at normal, with no subsequent rise, and uninterrupted recovery on the part of the patient.

Here was another case in which, had ergot been given, it would perhaps have been credited with the death of the fetus. I will give the history of one more case.

Mrs. O., French Canadian, age 38. Has had ten children at full time, and three abortions; health always good up to this pregnancy, now, as she believes, six or seven months advanced. Came under my care Feb. 5th, complaining of vomiting, epigastric pains, aching in back, insomnia, and general distress. Temperature sub-normal, 97° ; urine on boiling becomes almost solid. On use of Hunyadi water and diuretics vomiting ceased, but no improvement in other respects.

12th. — Patient feeling much worse, very little urine passed, not more than 4 oz. a day, and that passed with difficulty and presenting no improvement. Had a fainting fit last night and slight epistaxis, no headache, heart-beat feeble, and pulse almost imperceptible and very quick.

22d. — Has grown much worse the past week. No motion of child for a week past. Woman very large, too much so to be caused entirely by a six months' gestation. Cannot detect foetal heart on auscultation. Abdomen evidently, from its size and feeling and difficulty of detecting outlines of uterus, containing large amount of fluid. Ankles very much swollen and labia immensely distended with infiltration, making examination per vaginam impossible. Punctured the labia in a number of places with a needle, from which there was a constant flow of water all day.

23d. — Swelling of labia and abdomen much reduced. Can now succeed in reaching os uteri with finger, and in passing a sound guided by the finger; a large amount of water passed off during the day.

24th. — Again passed the sound, and labor pains came on during the day, and, about 3 P.M., a dead and putrid fetus of about six and one-half months' development came away.

25th. — Abdomen still very much swollen, but water passing freely and urine shows but little albumen.

29th. — Enlargement all gone. Urine shows but a trace of albumen, and patient doing well, and from this time made a complete recovery.

In conclusion, then, it appears: —

That only a small portion of the subjects of albuminuria during pregnancy become the subjects of eclampsia.

That eclampsia may appear in those in whose urine albumen has not been detected, and who have presented none of the usual general symptoms leading to a suspicion of its existence, which cases are probably of a reflex character, and that therefore some other element or condition is

necessary for the production of convulsions besides the condition of albuminuria; and which, until we are better informed as to what it consists in, we may call it an irritable or explosive condition of the nervous system.

That the subjects of albuminuria are very liable to premature labors, and also to still-births, and that in those cases the fœtus may present, in commencing or advanced decomposition, evidences of a post-mortem retention in utero for some time; that this ante-partum death of fœtus probably depends upon a state of toxæmia in the mother, but even, in some cases, upon secondary changes in the placenta and interference with the fœtal circulation, and that the parturient may incur additional sufferings and dangers from the death and decomposition of the fœtus.

That the apoplectiform variety may occur in either an albuminuric or non-albuminuric parturient, the typical case being a stout, healthy-looking, full-blooded woman, in whom, during labor, especially in the second stage, with the powerful muscular efforts of the patient, the face becomes purple, and the veins of the head and neck turgid, and distended to a degree apparently ready to burst, and in whom it is apparent that the brain is equally turgid with blood, and quite conceivable that these distended vessels may in some spot have yielded, and occasioned more or less of an effusion: or perhaps only a distention to rupture of some of the fibres of the vessels, preventing a ready contraction, and in whom, therefore, more or less of a congestive state may remain for some time. In my experience these cases have usually had the convulsions after completion of the labor, and perhaps we may find in this explanation the reason also for this delayed outbreak. These are the cases in which free venesection has an almost uniformly speedy and favorable effect.

On the other hand, in the typical-appearing albuminuric, with pale and pasty complexion, with anasarcaous ankles and tumefied tissues under the eyes, etc., we have none of these appearances of active cerebral congestion. And yet, as Marshall Hall has shown us how similar may be the symptoms arising from cerebral congestion, and from excessive losses of blood, is it not possible to find in both these classes, the florid and robust-looking, and the anæmic and unhealthy-looking, so very different conditions leading by different ways to similar final results? In the one, the pressure of an active congestion or effusion of healthy, red blood; in the other, a similar pressure from an effusion of its watery part, as exhibited in the cellular tissue of the legs, the face, and even in the abdominal cavity.

CORRESPONDENCE.

DR. BATTEY'S ATTACK ON MR. LAWSON TAIT.

DEAR DR. CUSHING. — I am greatly obliged by your courtesy in forwarding to me a report of Dr. Battey's intemperate attack on me in criticising the paper of my friend Dr. Rufus B. Hall. Dr. Battey has said the same things over and over again. I took the trouble to reply to him in detail in the "Atlanta Medical Journal" some months ago, and, as he ignores that reply entirely, it is perfectly useless to waste more time on the question, especially as I don't care a straw about priority. As a matter of fact, my first operation for chronic inflammatory disease of the uterine appendages was performed on Feb. 11, 1872, was perfectly successful, and cured the patient. It was published in my first series of cases in 1877. Dr. Battey's principle of bringing about the change of life is not one which ever commended itself to me. I tried it and it failed; it is, in fact, now wholly discarded. The principle of removing distended ovaries is as old as Ephraim McDowell, and who first removed diseased tubes is a matter of indifference. It certainly was not Dr. Battey. Dr. Battey tells us he has begun to pray; and I really think it time he did. The tone and temper of his utterances are such that I hope he may continue his prayers, and that they may be answered.

A more important point in the copy you have sent me than anything Dr. Battey has said, is the utterance of Dr. Howard A. Kelly, who, if my memory serves me right, wished to make a "tramp" visit here some time ago, which was declined. Dr. Kelly says that he "thought Tait jumped at his diagnosis in extra-uterine pregnancy. I have heard that he makes his incision, runs in his hand, pulls out something, says extra-uterine pregnancy, and throws it away. Now it will take more than this to make a diagnosis; we must make the section under the microscope, and make a very thorough examination." This is the same young gentleman who at the meeting of the British Medical Association at Brighton was so cock-sure of having diagnosed a tubal pregnancy before the period of rupture, — when he had not run in his hand; when he had nothing to pull out, and nothing to throw away; when, in fact, he had no microscopic examination and no very thorough examination; nothing but an overwhelming belief in his own infallibility and the mendacity of everybody who does not agree with him.

Dr. Howard Kelly's behavior only shows completely what danger there is in these "tramp visitors." If they are allowed to come, they don't understand what they see, and if they are not allowed to come, they

invent anything which their malicious ingenuity can suggest. Every one of my preparations of ruptured tubal pregnancy, removed by operation, has been subjected to microscopic examination, and has been shown before the British Gynæcological Society, and none of the competent critics there assembled have expressed dissatisfaction with the exhibition. Most of the specimens are now in the museums of the Royal College of Surgeons, London, and Queen's College, Birmingham, where Dr. Howard Kelly can see them. As for throwing any of my specimens away, every one who has seen my practice knows that that, at least, is a lie.

Kindly make any use you like of this letter, and believe me to be

Yours sincerely,

LAWSON TAIT.

DETROIT GYNÆCOLOGICAL SOCIETY.

STATED MEETING, APRIL 7TH, 1888.

THE Society met at the office of Dr. MANTON. — the President, Dr. D. W. JENKS. in the chair.

Exhibition of Pathological Specimens, Instruments, etc.

Dr. MANTON showed Fowler's Needle Holder.

Dr. JENKS exhibited the "Perfect Douche"; also some rolled masses, like marbles, taken from a dermoid cyst of the ovary. The tumor contained fragments of cartilage, and a number of these balls.

Written Communications.

Dr. E. P. CHRISTIAN read a paper on "Vaso-Renal Changes, as a Factor in Causation of Still-births."

Discussion.

Dr. HUTTON asked if, in those cases where the patient dies, there was any considerable amount of blood lost, either by venesection or otherwise; to which Dr. Christian replied that, as a rule, there was not.

Dr. HUTTON stated that he had been so fortunate as to have had but two cases of this nature, both of which he had bled freely. Both of these cases recovered; one being delivered naturally, the other by forceps.

Dr. CARSTENS considered the paper valuable, as being based upon carefully compiled statistics from private practice. It had occurred to him that possibly the treatment instituted to relieve the patient had something to do with killing the child. May not the premature delivery of the child, which often occurs, be a wise provision of nature to relieve the mother?

In some cases, especially where there is albuminuric retinitis, active measures on the part of the physician are absolutely necessary.

Dr. BROWN said that he had had one case of puerperal albuminuria in a primi-

para, 24 or 25 years of age. The patient was said to have had convulsions, but no attack had come on during his visits. The child was prematurely expelled, and the termination of the case was favorable.

Dr. MAIRE had noticed that the writer of the paper had failed to say anything about treatment before labor. This he considered important. Charpentier advises an exclusive skimmed-milk diet; the result of which is a rapid disappearance of the albumen, and no convulsions follow. At present he (Dr. Maire) has a case which he is treating with infusion of broom-tops, the result being an increase of urine and diminution of albumen. He had lately seen a case in consultation which was delivered by forceps. There had been two convulsions before and two after the operation. Full doses of *Tr. Veratri Viridis* controlled the reflexes completely, so that no further seizures took place.

Dr. MANTON had seen but two cases lately of the nature of those mentioned in the paper. In the first, seen with Dr. Longyear, there had been an abundance of albumen in the urine. *Pilocarpin* was given and partially controlled the eclamptic seizures; the child was born prematurely, the mother making a good recovery.

In the second case, seen with Dr. Andrews, there was undoubted disease of the kidneys present. As the convulsions were not controlled by any of the agencies employed, premature labor was induced. The convulsions continued, however, and the case terminated fatally.

In regard to bleeding, which was spoken of in the paper, this treatment had been almost wholly abandoned in the great lying-in hospitals abroad, the hot-water or blanket bath having been found to give better results.

Dr. JENNINGS believed that it was now a pretty well established fact that still-birth and albuminuria were connected, — the material condition causing the death of the fœtus.

Dr. CHRISTIAN, in closing the discussion, said that the consideration of the subject of his paper did not admit the discussion of treatment, else he would have said more on that point. He had not been in the habit of bleeding, but, in the cases of apoplectic subjects, he had resorted to venesection with invariably good results.

W. P. MANTON, M.D.,

Editor.

A FEMALE MONSTRUM. — TWO COMPLETE AND SEPARATE VULVÆ AND VAGINÆ; FOUR MAMMÆ; THREE LEGS.

BY DR. J. BECHTINGER, PARA, BRAZIL.

This person is 25 years of age, a native of Martinique (French West Indies), her father a Frenchman, her mother a quadroon. Both healthy, never remembering any deformity in their family or kindred, no constitutional disease, syphilis, scrofula, or allied maladies. The third leg is attached to a continuation of the processus cociygeus of the os sacrum, such as I have noticed among some Malay tribes in the interior of Sumatra (Dutch East Indies); however, not in such proportion, even

approximatively. She is still living, but left her native country for France, where this photo was taken in Paris about a year ago.

Besides the two well-developed mammae in their natural position, a *third* one, which is double, is seen above the *os pubis*. The hair surrounding the lower segments of the abnormal mammae covers the two vaginae with well-developed *vulvae* (major and minor). Both vaginas are properly supplied with nerves, and normal sexual connection, with correspondingly natural sensations, is possible in either vagina. The sexual appetite is very markedly developed.

Every other function appeared normal, as well as the function of the vital organs.

Being informed of the existence of a man in France with two genital apparatus, with two penes, four testicles, and three movable legs, she expressed the desire and determination to make his acquaintance. A photograph of the latter individual is enclosed.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

THURSDAY, MAY 3, 1888.

THOMAS M. DRYSDALE, M.D., in the chair.

Dr. JOSEPH PRICE reported a case of "Typhoid Fever following Ovariectomy." Mrs. E. N., age 37, one child sixteen years ago; one miscarriage fourteen years ago, complaining since miscarriage of great pelvic pain, etc. Was operated on at the Gyncecan Hospital, February 11, 1888, for the removal of the right uterine appendage. The tube and ovary were firmly adherent to and under the fundus uteri. The ovary was enlarged and cystic. The removal was not difficult, and the operation was completed in twenty minutes. Two years previously the left appendages were removed for a small inflamed and adherent ovarian cyst, the right side at that time appearing perfectly healthy. The recovery from this first operation was speedy, and for a year the patient seemed in perfect health. Then the symptoms of pelvic trouble returned and were referred to the right side. From the second operation the patient reacted perfectly, and for nine days her temperature constantly remained above normal, varying from $98^{\circ}.6$ to $100^{\circ}.1$, the intermissions never amounting to one degree. During this time she also complained of a good deal of headache, weakness, and mental depression. On the evening of the ninth day her temperature ran up to 102° and she had a slight rigor. From that time she presented a typical case of typhoid fever, including the characteristic temperature record, stools, and eruption. The nervous symptoms were not particularly marked. The temperature varied from $99^{\circ}.8$ to $104^{\circ}.8$ for four weeks. The patient made a good recovery, and is now in better health than before the operation.

The points of interest in this case are: first, That the patient was probably in the early stage of typhoid fever when she entered the hospital, there having been no cases in or near the hospital at that time. Second, The operation did not seem to influence the course of the fever, nor the fever the result of the operation. Third, The temperature combined with the early constipation and meteorism were naturally attributed to the operation, and treated accordingly, until the diagnosis of

typhoid fever was made, after which the usual expectant treatment for that disease was pursued.

Dr. WM. GOODELL exhibited a specimen of "Hæmato-salpinx." The right tube was enlarged to the size of a fist and filled with broken-down blood-clots. It burst either just before or during the operation, for the woman had not complained of abdominal pain, and when the abdominal incision was completed, a quantity of bloody serum escaped from the wound. At first examination, Dr. Goodell thought it was a case of tubal pregnancy. Both ovaries and tubes were adherent and removed with difficulty. The abdominal cavity was flushed with plain warm water and a drainage-tube put in. The woman recovered promptly.

Dr. GOODELL also showed a specimen of "Fibro-cystic Tumor of the Womb." The patient, a single woman, aged 46, had regular but profuse menstruation for several years. Three years ago a tumor was discovered, which had gone on increasing. Fluctuation was so marked and the cyst so flaccid that Dr. Goodell thought it was a parovarian cyst. The patient would not permit a vaginal examination; but that could not have thrown any light on the diagnosis. The cyst was multilocular, weighing 33½ pounds. It sprang from the right corner of the womb, and had dense parietal and some pelvic adhesion. The pedicle was transfixed and tied, its end scooped out, and the peritoneal edges sewn together by a continuous gut suture. The ovaries, being healthy, were not removed. Recovery was prompt, although the drainage-tube had to be kept in for eleven days.

Dr. H. A. KELLY, speaking of the first specimen, said that he would call attention to an error in nomenclature. If we found a laminated clot in the ampulla of the tube, we termed it an hæmato-salpinx; again, in another case, where there was a large amount of watery but distinctly bloody fluid, which is unquestionably of a different origin (what the origin is, it is impossible, at present, to say), we call that by the same name. In this second class of cases he had found by one bad experience that the fluid was intensely poisonous, and would produce violent septic peritonitis in a short time if every trace was not removed. The fluid character of the collection causes it to diffuse itself quickly, and even the washing seems to cause it to be more thoroughly diffused. He thought it would be well if every case of hæmato-salpinx were reported, bearing in mind the different origin and clinical history of the two classes of cases.

Dr. HOWARD A. KELLY exhibited a "Knife-blade Tenaculum." While he had rarely found, in his experience, that local depletion was alone valuable as an agent for the cure of any forms of uterine disease, he frequently found it a powerful adjuvant, similar in its results to the benefits obtained from the cotton tampon. Chronic or recurring pelvic congestions, accompanied by great pain and discomfort, can often be tapped by a free depletion of the cervix, and the patient's condition temporarily much improved. Many of the neurotic symptoms associated with a congested, puffy, blue, plethoric cervix also undergo marked improvement with this plan of treatment judiciously carried out, combined with applications of glycerole packs and tamponing. He knew of no other method equally serviceable and speedy for the treatment of lacerations of the cervix with eversion and infiltration of the lips. Many cases upon which he had heretofore been in the habit of operating now recover perfectly when thus treated, and remain well if the uterus is prevented

from sagging, by giving proper support to a torn or relaxed outlet. Except in the latter condition, when associated with lacerations, depletion is not often called for in spare or anæmic patients.

To secure any advantage by this method it must be carried out thoroughly; he is in the habit of drawing from six drachms to an ounce, or an ounce and a half, of blood every five days, or once a week, following the depletion immediately by a glycerole or boracic acid pack, which is often retained until the next depletion.

To deplete the congested pelvic organs he has used the cervix on both vaginal and uterine surfaces, and the vault of the vagina, the latter being used in a series of experimental studies. He is not sure that it has any special advantage over the simple depletion of the cervix. Serious difficulties have occasionally arisen in other hands from too deep a penetration of the scarifier, which may wound an artery of large calibre, and give rise to alarming hæmorrhage. Difficulties also arise in the use of the spear-pointed instrument, which often occasions great pain to the patient, obliging the operator to desist or to make but few punctures. A serious practical objection against the straight instrument in use is that the depletion can only be practised with safety and satisfaction upon the prominent and rounded extremity of the cervix. To obviate these objections he had invented the "Knife-blade Tenaculum," here figured, which had been in extensive use in his office for many months.



It is made like an ordinary tenaculum, with a blade in place of the hook. This blade is placed at an angle slightly obtuse to the handle and about the same length as the point on the ordinary rectangular uterine tenaculum. In using it the cervix should be fixed by a tenaculum in the uterine canal, when the small, short blade of the instrument can be plunged rapidly in a number of places into the vaginal surface of the cervix anteriorly and laterally, and even within the cervical canal being sometimes used to open a very small external os. The shortness of the blade, and the fact that it is placed at an angle to the shaft, prevents a deep and dangerous penetration; and if the cutting edge is kept sharp, and it is used with rapidity, it occasions, as a rule, but little pain to the patient.

This tenaculum is made entirely of metal, $7\frac{1}{2}$ in. in length, tapering gracefully from handle to the blade, which is $\frac{3}{16}$ of an inch long, $\frac{1}{16}$ of an inch broad at its base, $\frac{3}{16}$ of an inch wide on its back. A very satisfactory model has been made by Mr. Gemrig, of this city, who furnishes the wood-cut.

Dr. J. C. DACOSTA was glad to hear Dr. Kelly speak so highly of the value of depletion in certain diseases of the uterus. He was in the habit of exemplifying this by the exhibition, each winter, of one or two suitable cases to his class at the Jefferson Hospital. He thought if from one to four ounces or more blood was removed, instead of six drachms, that the effect would be better. A woman who, when placed on the table, is suffering with great pain and with an angry-looking cervix, will, after such treatment, leave the table free from pain and with the uterus paled down. The knife exhibited, he thought, was very pretty, but an ordinary

straight bistoury enabled him to puncture the neck all over and inside as well. Even if an artery was cut it was of small matter. The trouble, usually, was that the bleeding stopped too soon. If he removed the speculum the bleeding almost always stopped, but the speculum was always replaced to make sure that this was stopped.

Dr. WILLIAM GOODELL remarked that there was one point which Dr. DaCosta had overlooked, and that was that in most cases simple exposure of the cervix to the air by the speculum will cause it to become pale, although he granted that the effect was caused by the loss of blood. He used to bleed very frequently, and occasionally still did so, but not so often as formerly, because he believed the importance of uterine congestion was overrated. With reference to the hæmorrhage, while he in a manner agreed with the last speaker that it was not usually to be feared, yet he had a patient who bled so furiously after she reached home that she had to send for a physician to check it. On one occasion, while plunging a Battles spear, he struck a vessel of such size as to throw a stream directly out of the speculum. But ordinarily the difficulty was to secure enough blood. When the punctures bleed too much, he touched each one with a pointed stick of lunar caustic, which never failed to stop the hæmorrhage.

Dr. PARISH could endorse all that Dr. Kelly had said. For a number of years he had practised this method of depletion of the uterus, whether there was laceration or not, when the organ was in a condition of congestion. He also emphasized what had been said with reference to the relief and cure of symptoms in cases of laceration of the cervix. He had seen, as a result in many of these cases, a perfect union of the denuded surfaces, but a continuation of the pain and distress, and frequently an increase of dysmenorrhœa. In cases where the laceration was not deep, he substituted the method of local depletion, conjoined with other treatment, for the operation. He added, that depletion of the cervix, and particularly of the canal, was one of the best methods of treating many cases of endometritis. He had seen sterility of eight and ten years' standing practically cured by this method of depletion.

Dr. KELLY thought that an ounce and a half of blood removed every few days was quite sufficient. In performing the depletion the patient lies on the back with either Goodell's or Nelson's speculum in place, which conducts the blood into a wide-mouth bottle with graduated capacity. He was glad that the members had expressed themselves so freely and favorably in this matter, as these are the practical conclusions at which he had arrived.

Dr. KELLY also exhibited a "Self-retaining Speculum." I present this instrument as containing the germs of what I think will be a successful self-retaining speculum for the knee-breast position. A number of specula for this purpose have been invented. Some have taken a purchase on the buttock, others from a belt around the waist, and others still higher up. It seems to me that such a speculum should take a purchase from the pubic ram, for there we get a firm resistance. Here we have such an instrument for the knee-breast position, not for the Sims position. It consists simply of a dilator of the vaginal outlet. It obviates the necessity for a nurse, which is often a serious objection.

Dr. J. M. BALDY reported a case of Hysterectomy, followed in four months by

Ovariectomy, and again in six weeks by Abdominal Section for Purulent Peritonitis. Mrs. P., age 43 years, colored, came under my care on the seventh day of last November. She had for years been suffering more or less discomfort from an enlarged abdomen. However, until within the year past, she had managed to get along very comfortably. About twelve months previous to the date of my first visit, while lifting a wash-tub, something "slipped back into her belly," and at the same time the abdomen became somewhat smaller. This was in all probability caused by the large fibroid uterus, which had been resting on the pubis, being suddenly dislodged. She now began to suffer acutely from pressure symptoms. The bladder and rectum prolapsed, and were for the most of the time between her thighs. She had difficult and scanty micturition; constipation was constant. Finally the urine became loaded with pus; her abdomen became enormously distended with ascites, and she suffered constant pain, besides losing large quantities of blood. At the time of my taking charge of the case she could be out of bed only about two hours a day, on account of the great swelling of her legs and feet. She had been attended by a number of different physicians, and had been repeatedly tapped, the last tapping having been done on the Saturday previous to my seeing her. After each of these operations she was confined to bed for several days with an acute pain in the lower part of the abdomen, and she was now suffering from one of these attacks of peritonitis, — so much so that I could only with difficulty manipulate her abdomen.

The diagnosis was extremely simple, and she readily consented to an operation with the full understanding that the chances of recovery were strongly against her. On the following Saturday, just one week from her last tapping, I opened her abdomen and removed a fibroid uterus, weighing five or six pounds. At the time of the operation her belly was so distended with fluid that her breathing was badly interfered with; over three gallons of fluid were removed. The operation was performed by the extra-peritoneal method. I was able to place the "*serre-nœud*" below and including, as I then thought, both ovaries, and thus obviated the separate removal of these organs: this, however, finally proved to be a fatal mistake. In cutting away the tumor it became necessary to leave part of the right ovary on the stump, in order that the button might be large enough to prevent the "*serre-nœud*" from slipping. The peritoneum was the thickest I have ever seen, being fully half as thick as one's finger. The patient recovered promptly from the anæsthetic, and, much to my surprise, went on slowly and without complication to recovery. For the first ten days I removed daily from the drainage-tube over a quart of straw-colored, syrupy fluid, and I was at one time afraid that the peritoneum would never stop secreting it. On the eighth day the stitches, fourteen in number, were removed and union found to be perfect, with no stitch-hole abscesses. On the eleventh day the discharge from the drainage-tube stopped abruptly, after a dose of salines, and never again appeared. The tube was removed four days later. On the tenth day, while tightening up the "*serre-nœud*," it broke, and I was never able to tighten it afterwards. In consequence of this accident the stump was slow in coming away, and finally, after waiting a full month, slight septic symptoms having set in, I removed the pins and cut away the decaying tissue as far as I could and allowed the rest to retract. Within a few days I had succeeded in getting away, in small pieces, the little tissue which was left.

At the end of six weeks she was out of bed and again at her work, in better health

than she had enjoyed for years. The urine gradually cleared up and became normal. She had no more trouble from her prolapsed bladder and rectum; they disappeared entirely within the vagina. The depression left by the retracted stump never entirely closed, but continued to discharge from a pin-hole point one drop of pus daily.

Within a few weeks a ventral hernia began to show itself at the site of the drainage-tube, and gradually extended downward towards the pedicle, until finally it became as large as a big orange. This became more and more troublesome, and she complained of a dull pain at the lower part of the hernia. She being a poor woman, forced to work, and not capable of, or having time to, take the best care of herself, I advised her to go to bed again and have the hernia closed.

This she did on the 17th of last month. I opened the peritoneal cavity at the upper border of the hernia and slit up the tissues to the full extent of the rupture. Quite a large amount, probably a pint, of clear straw-colored fluid gushed out. Passing my finger into the pelvis to investigate the cause of this, I was surprised to find it filled up with a cyst, having for its attachment the old uterine pedicle, which was itself thin and elongated. The pedicle of this new growth was very short and broad. After securing it with a double ligature, it was removed and found to be a multilocular ovarian cyst about the size of a baseball. The omentum had been slightly wounded on entering the cavity, and as it bled freely a ligature was thrown around it and a small piece removed. Everything being now cleaned up, a large flat sponge was placed over the intestines and I proceeded to close the incision. The muscles and fascias were dissected out on both sides and united by a continuous silk suture. The wound was then closed by seven sutures introduced through the entire thickness of the abdominal wall. There was no drainage used, which was extremely unfortunate, for a drainage-tube would have saved her life. Recovery from the anæsthetic was prompt, and she seemed unusually comfortable. On the second day she complained of pain in the left chest, which for the next few days increased. This pain was apparently pleuritic, although I could discover no physical signs. She had a slight hacking cough, and about the fourth day began to spit up quite a good deal of dark-colored sputa. For the first week she was extremely restless, and said she did not feel nearly as good as after the first operation. Temperature remained slightly over 100° and the pulse about 90. On the seventh day the stitches were removed, and a drop of pus followed each of two of them; there was never any discharge from these points afterwards. This pus apparently explained her discomfort, lack of appetite, etc.; but instead of improving she grew slightly worse. From this time until the 2d of this month her temperature and pulse varied; on two occasions I found the temperature as high as 102°·5, but was never able afterwards to find it more than 101°·5. She complained, however, that her hottest time was towards morning, and that she sweated freely and could not sleep. Her tongue was of a nasty red color, irregularly covered with a thick white coat and pitted. By repeated examinations I could detect nothing wrong, and yet her whole condition seemed to me to be extremely suggestive of sepsis.

On the 7th of the month I asked a friend to see the case with me and advise as to the advisability of reopening her abdomen. Our decision was to wait and observe, and the old adage, "that he who hesitates is lost," was once more exemplified. From now on I was led hither and thither by the symptoms; sometimes she was

apparently much better, pulse and temperature would improve, and at one time the tongue was almost cleared and the mouth was not so sore. About this time I noticed a distention of the abdomen, more on the left side, with a region of dulness irregularly extending from the spleen to the pubis. By change of position there was no change in the line of dulness. This led me to think that there had been an acute attack of peritonitis, with effusion, and that soon all would be well. On the 9th of April about an ounce of pus was discharged from the side of the old pedicle, and after putting in a small rubber drainage-tube the cavity was kept well washed out. With this cue to the probable trouble I again lost my opportunity of operating. The symptoms all improved so much, and she progressed so well for a few days, that I was further seduced into the miserable policy of waiting. The pulse became 100 and the temperature $100^{\circ}.5$, and then things came to a stand-still. I now went out of town for three days, determined to operate, on my return, if there was no more improvement. On my return I found that there had been another discharge of pus and that she was very much better. This led me into still more waiting, but without any further improvement. Looking back over the past month I could see a decided and alarming loss, which had been pretty constant, in spite of the repeated changes for the better which had taken place in that time. On the 18th of April, about one month from the second operation, I undertook a third and last. The incision was made through the old wound. Here the tissues were an inch thick, hard and gristly. The hernia had been most effectually closed and the ends of the old suture could be plainly seen. Hæmorrhage could only be controlled by sponge pressure. On opening the peritoneal cavity the trouble was at once apparent. A quart of foul, fetid pus was removed. The abscess cavity extended from the pelvis to the spleen. The intestines were crowded back and to the right and universally adherent, shutting off the abscess from the rest of the peritoneal cavity. Everything was covered with an apparent pyogenic membrane. The cavities were all thoroughly washed out and four rubber drainage-tubes put in,—one extending to the spleen and one into the pelvis, the other two off sideways into deep pockets. The incision was then closed with four sutures. Recovery from the anæsthetic was prompt; pulse was 130, temperature 103° . But the pulse was 100 and the temperature 100° the next morning and she was very comfortable. The tubes were washed out twice daily. For the first time for weeks she was able to retain much food. She was given every twenty-four hours 20 gr. of quinine, $\frac{3}{4}$ viii of whiskey, one pint of beef tea, and a pint and a half of milk, together with a couple of eggs. She retained most of this, taking part of it by the bowel and part by the mouth. In spite of all that could be done, the pulse and temperature slowly, but surely, increased until the thermometer registered 103° and the pulse counted 120. She sank slowly, and died the evening of the 24th, six days after the last operation. No post-mortem was allowed, but on pretence of removing the drainage-tubes the incision was enlarged and my hand introduced into the peritoneal cavity. Breaking up the adhesions surrounding the abscess cavity, I found there had been a slight general adhesion of all the intestines over the whole abdomen to everything. The liver and spleen substance was surprisingly firm. No more abscess cavities were found. The general appearance of the abscess walls was that of returning health; the pyogenic membrane had disappeared and the peritoneum was beginning to look somewhat

like itself. There was fairly good union in the incision, but it broke down readily under pressure.

In looking back over the management of this case I recognize a number of fatal mistakes, and have learned some valuable lessons, which I hope I may never have to re-learn at the same cost. In the first place, all ovarian tissue should have been removed at the hysterectomy. However much I regret not having done this, there was at the time sufficient reason to justify leaving what little was left, especially as I thought the "serre-nœud" was below it and that it would all come away with the stump. I do not yet exactly see why it did not do so. The great error was in not being more careful in disinfecting the site of the old pedicle, which had never ceased to weep, before opening the peritoneal cavity a second time. The peritoneum undoubtedly became infected from this point during the necessary manipulations incident to the operation, and went on to a purulent peritonitis. Nature made a grand effort, even then, to save the patient, by throwing out adhesions as the inflammatory process advanced, and finally succeeded in saving half the cavity from involvement. After doing this she gave all the indication in her power as to what was the trouble, and by thrice discharging pus apparently called loudly for assistance, which she failed to receive until it was too late.

Dr. H. A. KELLY said that he was sorry to say that he had required many lessons to teach him what Dr. Baldy hoped to have learned from this one experience. If anything went wrong, which he could not attribute directly to the formation of stitch-hole abscesses, and those did not cause any profound disturbance beyond a sudden rise of temperature, he did not hesitate to enter the peritoneum, with great care. On several occasions he had opened the peritoneal cavity five, six, and seven days after operation, and, in a case of day before yesterday, two weeks after the original operation. He usually does this without an anesthetic, or, at most, a few whiffs of chloroform or cocaine locally. Cases requiring this have generally had a drainage-tube used, and can be readily reopened in the track of the tube. The case of day before yesterday was a pyo-salpinx, which had done well for ten days, and then the temperature and pulse began to rise. After giving a whiff of chloroform he introduced his little finger into the opening and penetrated to the floor of the pelvis, when a collection of blood intermingled with pus made its escape. This did not seem sufficient to account for the symptoms, and by further bimanual examination he detected fluctuation on the right side, and with his finger broke through a thin wall and let out a tea-cupful of very fetid pus. This was then washed out with his two-way catheter and a rubber drainage-tube inserted. Since then he has had his finger through that opening a number of times, for it has a great tendency to close. The case of Dr. Baldy's was instructive from the fact that it showed that there was a certain number of cases in which there is *dry peritonitis*, and the patients will sometimes die in spite of all treatment.

Dr. WM. GOODELL said that he congratulated Dr. Baldy on the courage he had shown in the treatment of his case, and he thought we had nothing to regret. He always felt a good deal of reluctance in reopening the peritoneal cavity, but he had to resort to it occasionally. He did not think that the best method of curing the hernia had been employed. In his opinion the most satisfactory plan is, after dissecting out the sac and thinned-out tissues, to close the opening with three series of sutures.

The first unites the peritoneum alone with a continuous gut suture. The second, also of gut, sews together the divided edges of the tendon. The third, of silk, and interrupted, penetrates deeply throughout the tissues but that of the peritoneum, and brings the edges of the skin and muscle together. The reason that we get hernia is that we fail to unite the tendon. To avoid the occurrence of hernia he had often thought it would be a better plan to cut through one of the recti muscles, instead of the linea alba; for then we have a broad, raw surface. He occasionally resorted to this plan in oöphorectomy, but it has the objection of being accompanied with more hæmorrhage. In large ovarian tumors the recti muscles were so widely separated that he was *per force* compelled to cut through their tendon at the same time he admitted that he did not ordinarily unite these edges by a separate suture, as is the custom of some excellent operators in this country. His reason is that this takes a good deal of time, and it is always desirable to close the wound as soon as possible. But occasionally, in cases of large ovarian tumors, he cut away a long strip of the thinned tendon on either side of the wound so as to bring the muscles close together. In a certain number of cases, however, hernia will occur, and this was one grave objection to the use of the drainage-tube.

Dr. PARISH asked if Dr. Baldy thought that the hernia was caused by the extra-peritoneal method of treating the stump.

Dr. BALDY said that the hernia was not due to the method of treating the stump. It began several inches above the stump, and gradually extended towards it. He had, however, seen cases where it occurred at the site of the stump, and he thought that this could not always be avoided on account of the large size of the pedicle and the subsequent contraction. He was glad to be able to criticise such a case in his own practice, as he could do so with more freedom than if it had happened to another. He thought it was his own fault that he had lost the patient. There were certainly enough symptoms to indicate the necessity for reopening the abdomen even a third or fourth time. The symptoms continuing after the first discharge of pus should have settled the question of reopening without any more delay. After the second discharge of pus he could not see why he had been so blind as to his duty. The patient would undoubtedly have recovered had the belly been opened early enough. Even as it was, after the long delay she struggled along for about a week, but she was so thoroughly saturated with septic poison that she had not sufficient vitality left for the fight. He would not approve such a policy of waiting in another, and could only excuse himself on the ground of lack of experience in such cases.

Dr. J. B. DEEVER reported a case of "Extra-Uterine Pregnancy." On the evening of Feb. 26, 1888, I was called to see Mrs. S. I found her in bed complaining of bearing-down pains in the lower part of the abdomen, which were very severe, with a pulse of 80, the temperature 99°, and the skin moist. I had attended her three years previously in childbirth and had delivered her with forceps. Three years prior to this I had operated on her for bilateral laceration of the cervix, from which she had made a rapid recovery. From the character of the pain of which she complained at my present visit, I thought she was threatened with a miscarriage. She had gone two weeks over her time for menstruation, and the pain had come on suddenly that afternoon. She admitted that she had been using abortifacients, but said there had been no vaginal discharge following the pains. Vaginal examination

was negative. I prescribed for her suppositories of opium, gr. i. each, to be used every three, four, or five hours, depending upon the amount of relief experienced. I saw her the next day at 10.30 A.M., and found her suffering quite as much pain as the day before, when I administered half a grain of morphia hypodermically and increased the suppositories to two grains each, one to be given every four or six hours, as required. The pulse was now 96 and the temperature 99° . On making an examination of the abdomen I found it slightly prominent. Tongue moist and general condition not at all indicative of any serious trouble. As yet there had been no vaginal discharge. Vaginal examination again revealed nothing new. From now I did not see the patient until Tuesday evening, when I was summoned to come forthwith. Upon my arrival I found the patient much depressed, abdomen more distended, pulse 96, temperature 99° , tongue moist, some nausea. The pain was now referred more particularly to the umbilicus, and described as being more continuous than at the last visit. I now determined to make a more thorough examination. Deep vaginal pressure revealed a mass, apparently the size of an English walnut, situated to the left and posteriorly. This to my mind was one of two things, — either an extra-uterine cyst or a knuckle of intestine, which was the seat of obstruction. At this visit the patient was sick at the stomach and considerably depressed. Again I made a thorough examination of the abdomen, which revealed nothing more than the general distention. Up to this time the patient had had no action of the bowels; this I associated with her general condition and the symptoms referable to the abdomen, and believing her trouble to be either a rupture of the extra-uterine cyst or an acute intestinal obstruction, I determined to ask for a consultation with the view of performing abdominal section. I asked Dr. Jos. Price to see her with me, and we both agreed that the operation was urgently demanded. The next morning the abdomen was considerably distended and sensitive to the touch, and still no physical signs of a tumor. The vomit was becoming stercoraceous and the patient was showing more evidence of depression, yet her temperature was 99° and her pulse 96, considerable in volume, but having a wire pulse indicating a peritonitis.

At twelve M., assisted by Drs. J. Price, Wm. White, M. Price, and H. C. Deaver, the patient was placed on the table, and the abdomen was opened in the median line, between the umbilicus and os pubis. As soon as the peritoneum was reached it was very evident that the patient was a subject of internal hæmorrhage. Opening the peritoneum as rapidly as possible, I introduced my index-finger into the lower part of the abdominal cavity, breaking my way through a mass of clotted blood, and brought the right tube and ovary into the incision. Finding these to be normal I turned my attention to the left side, when I found at the junction of the tube and uterus a ruptured extra-uterine cyst with the placenta in situ. In attempting to ligate this off the placenta was dislodged, occasioning for a few moments a frightful hæmorrhage. I quickly transfixed the broad ligament below the cyst, and in ligating found it necessary to include the superior cornu of the uterus before the bleeding could be controlled. The pregnancy was tubo-interstitial. Having secured my ligatures the cyst was cut away. The fetus could not be found. An ordinary sized basinful of clotted blood was removed from the peritoneal cavity. After the removal of this the sigmoid flexure, distended to the size of an ordinary wrist, presented itself at the bottom of the wound; it was considered judicious to

examine this portion of the intestinal tract owing to the great distention, when it was found that at the junction of the terminal portion of the descending colon with the sigmoid flexure there was a marked kink of the bowels, due to an inflammatory band. This was relieved, which resulted in the intestine contracting and expelling a large amount of flatus per anum. I now learned that the patient had been given by her husband, two or three days previously, an enema of soap-suds, and that the night before, when the husband was administering the enema again, he lost the rectal nozzle and had not since been able to find it. Having completed the operation with the exception of making the final toilet of the peritoneum, it occurred to me it might be well to examine the lower part of the sigmoid flexure as well as the upper part of the rectum, when I discovered a foreign body, evidently the rectal tube, in the sigmoid flexure. This was pushed along the bowel into the rectum, from which it was removed, after some little difficulty, with a pair of sponge forceps. The abdominal cavity was irrigated with hot distilled water, and a glass drainage-tube was introduced into the left pelvis. The wound was closed with six interrupted silk sutures.

The wound was dressed with a dry aseptic dressing. The patient showed very little depression from the operation, and progressed very well for three days, when the drainage-tube was removed. For two more days she did well, then the abdomen became very much distended, and the vomiting recurring. The temperature went up to 101°. I naturally thought that in all probability a small collection of purulent matter in the pelvis might be the cause of these symptoms, and therefore opened up the lower part of the wound and explored the pelvis, but could find nothing more than what proved to be healthy deposit. To be on the safe side, I introduced a small drainage-tube, but with little or no effect. The patient died at the end of twenty-four hours. Unfortunately I was unable to secure an autopsy, but I think the immediate cause of death was not probably obstruction of the bowels.

[*To be continued.*]

HOSPITAL REPORT.

ONE HUNDRED AND TWENTY-FIVE CASES OF LACERATION OF THE CERVIX. — OPERATION TRACHELORRHAPHY. — NO DEATHS. — MURDOCK FREE SURGICAL HOSPITAL FOR WOMEN. — SERVICE OF DR. E. W. CUSHING. — REPORTED BY F. L. BURT, M.D.

FOLLOWING the sketch of the records of one hundred and fifty cases of dilatation and curetting, to which attention was called in the June number of the ANNALS, it seems quite fitting to extend the line, and detail after a similar manner an account of the operation which evidently comes next in order; namely, that for laceration of the cervix. This list comprises one hundred and twenty-five consecutive cases for which the operation of trachelorrhaphy was performed during the past year, and every case was successful. The condition of laceration was associated with various other diseases, many of which were surgical and called for their special opera-

tion also. The complications will be seen from the following tabular view, several cases, as will be noticed, having one or more associated conditions :—

Dysmenorrhœa	1	Epithelioma	1
Cystitis	6	Endometritis	76
Fistula	3	Erosion	18
Subinvolution	16	Ruptured perinæum	56
Caruncle	3	Versions and flexions	48
Polyp uteri	2	Epilepsy	1
Cystocele	13	Gonorrhœa	4
Rectocele	18	Adhesions	12
Fracture coccyx	2	Cellulitis	5
Swollen glands Bartholini	2	Metritis	4
Varicose veins and specific ulcer	1	Salpingitis	4
Prolapse or procidentia	7	Ulcer rectum	1
Abdominal abscess	1	Pariostitis tibia (fistula)	1
		Cancer	6

The symptoms complained of in these cases are rather numerous, and of course differ considerably, yet there are a few which are characteristic of this condition. Many will be found which are not symptoms of the laceration at all, but belong to some one or more of the complicating diseases, as shown above.

Among the more common symptoms are : backache, dragging sensations about hips, rapid fatigue on standing or walking, pain in some portion of pelvis, tenderness in median line or laterally, sensation of fulness of the abdomen, a great variety of nervous derangements, varying quantities of vaginal discharge, and various results of pelvic congestion. Other conditions, of more or less frequent occurrence, are as follows : Pressure in bladder or rectum, associated perhaps with tenesmus, constipation and its effects, mal-assimilation after failure of the digestive processes, palpitation, headache and various neuralgias, and so on.

Of the patients belonging to this class the majority are able to be about most of the time, some of them doing a considerable degree of work ; fewer of them are partly confined to bed, and a still smaller number are wholly invalidated for months or years. All, however, suffer greatly, and the great majority eke out a most miserable existence. A few are comparatively recent cases, the symptoms coming on early and the patient soon seeking relief ; but most patients have suffered for years, sometimes twenty-five or more, and finally have come to operation as the last resort. This is to be expected, when we consider that most of the women

have gone through various forms of medical and mechanical treatment, with nothing more than temporary relief. The sufferings had to be endured because everything possible was supposed to have been done, and surgery, if suggested, could not formerly hold out the inducements which it does within the last few years. In order that we may fully appreciate the course of a case of this nature, it might be instructive to relate briefly the facts of one, which we may consider typical. A girl, perhaps twenty years of age, who has a remarkable constitution and has never known pain or sickness, marries. Within the year she gives birth to a child, after a normal pregnancy. The labor is considered hard, and somewhat prolonged. It is thought that the child cannot be born naturally, or delay makes the attendant impatient. Instruments are applied, perhaps too early and unskilfully, and perhaps used with a power far too great. The child is born quickly, and the mother recovers slowly from the shock. She has not bled to death, therefore is considered all right, yet it is six weeks before she can rise from her bed at all. Then there is a general weakness which forbids much effort.

Previously strong, she is now equally depressed. Pains and bearing down continue; leucorrhœa is irritating and troublesome; the bladder becomes infected; cystitis results; frequent urination and contracting bladder follow. The sphincter ani is not wholly under control, and there is more or less incontinence of feces. She is treated frequently for weakness or nervousness, and never much benefited. No local examination is made, and she is led to suppose that all possible is being done. Finally, after passing twenty or more of the best years of her life in this way, she is examined, operated upon, and cured. Such cases are sad, and far too frequent. This is an accident which is likely to happen to any married woman, which can be avoided in many cases by very skilful management before and during labor, yet is almost unavoidable in a few cases. All patients, however, can feel that an operation which, well performed, is attended with extremely little danger, will restore the rupture and relieve the symptoms.

Previous to operation the patient is prepared in essentially the same manner as was described in the June number for the operation of curetting, and the patient is also placed in the lithotomy position. Sublimate soap is applied externally, with thorough washing, and the vagina irrigated with a 1 to 2000 sublimate solution. The fingers should be passed well about the vagina, so as to smooth the membrane, thus giving the sublimate a chance to act upon the entire surface. A thorough examination is made under the anæsthetic before operating. This may prevent trouble which otherwise might result. Adhesions are to be looked for, and, if present,

broken up if possible, and if it is considered safe. Diseased conditions of ovaries and tubes are to be looked for, and proved or excluded.

A little inflammation and some tenderness is not a contraindication to the operation on the cervix, whereas, if diseased ovaries or tubes were present, operating interference would most likely only aggravate the suffering. In the latter case a laparotomy would probably be more in order, supplemented later by the repair of the cervix, if necessary.

The lead speculum is introduced, which, by its own weight, retracts the perinaeum, the vaginal walls separated, and cervix seized by the anterior and posterior lips with forceps. In case there are no adhesions, inflammatory deposits, or pelvic tumors, the cervix will be found to descend with ease nearly to the introitus vagina. This will give a perfect view of the cervix, which, if lacerated, we will usually see in one of three conditions: either as a unilateral laceration, usually to the left; or through the median line, both left and right; or of the stellate variety, extending from various points.

There will usually be seen, also, some discharge from a diseased endometrium, or an ulcerated condition of cervix, with lips separated, — ectropium, or cysts of varying sizes beneath the mucous membrane. Only after the patient has been well treated, before applying for surgery, do we find the tissues in a healthy condition, with nothing but the laceration present. The cervix is now measured on either side with the finger, or by an instrument passed up to the vaginal vault, and with a sound in the uterus if desired, so as to determine whether and to what degree the laceration is uni- or bi-lateral, and the lips are brought together flat, so as to find how the cervix will appear when denuded and repaired. Sounding of uterus is done with precaution in all cases. The uterine cavity is now dilated, if necessary, and the curette used, if there is any disease of the endometrium, after which the uterus is irrigated and mopped out. Next we proceed to the operation proper on the cervix. Dr. Cushing employs three methods, all of which are efficacious in their way. No one of them can be best used in all cases, but, if selected properly, each of them will prove entirely satisfactory. These can be appropriately named as the Martin, Emmett, and tube operations. Martin's operation removes the whole face of the cervix, cutting through the uterine canal, and is really an amputation of the cervix. This part is best removed with a knife, holding the cervix with forceps. When there is subinvolution of the uterus, or an elongated or hypertrophied cervix, a large ulcer, malignant or otherwise, when a more extensive operation is undesirable, the Martin method is indicated. Sutures may be placed in the corners if there is much hæmorrhage, after which the mucous membrane of the cervical

canal and vaginal portions are approximated with sutures, usually three anteriorly and three posteriorly, so that the canal is restored. Then two or three sutures are passed deeply on each side of the canal, through both lips, so that the freshened surfaces are coapted perfectly. This acts as a fine uterine stimulant, and produces a very satisfactory degree of involution.

Emmett's method is excellent in many cases, for a description of which reference to his own admirable work is desirable. For laceration, either uni- or bi-lateral, when there is no disease of that portion of the membrane which is to go to make up the canal, the results of this method are all that can be desired. The denuding is done with tenaculum and scissors, or a sharp knife may largely replace the scissors. Many cases can be excellently treated by the tube method. This consists in refreshing the entire surface with a knife or scissors, introducing a rubber perforated drainage-tube, two and a half inches long, into the canal, fastening it with a suture to the cervix, and approximating the anterior and posterior lips so as to close the wound all about the tube. The sutures used in this hospital are almost entirely of silk for this operation. This is easier to insert and remove, and can be left indefinitely without causing any trouble. Sutures are, however, usually removed in from eight to fifteen days, and the tube is usually removed at the same time, when it will be found that the process of healing has gone on around the tube, forming a canal which remains pervious afterward. A continuous animal suture may be used, but will have no advantage over silk. Sometimes, from various causes, sutures may give way; but, usually, not more than one or two, so that by this the healing is usually not much interfered with, and the results are satisfactory. I can refer to the notes of but one case where the operation was a failure, no suture holding at all, and the symptoms in no way improved; but, after a secondary operation in the same manner, the result was as desired, and the patient grew rapidly better. The tube method I consider often very desirable, as one can refresh and get rid of all diseased tissue, at the same time removing only very little uterine substance; and, at the same time, getting as perfect a canal as by any operation. This is especially of service where there is cystic degeneration, or erosion of the cervix, or in any case in which it is necessary to remove the whole surface, in which free amputation is unnecessary; although it can be used also in these cases, yet not to so much advantage as the Martin operation. A fresh, freely bleeding surface is essential for good union, and the cicatricial tissue which is usually found in the corners where some healing has taken place, should always be removed. Irrigation is necessary during the performance of the operation, allowing it to flow over the freshened surfaces so as to prevent sepsis, and all the instruments used should be

handed directly from an antiseptic solution. When completed, a little iodoform, iodol, or any satisfactory dressing-powder is placed against the cervix; and, if thought advisable as a means of support, a packing of wool or cotton, with iodoform, may be placed in the vagina. Usually, very little after-treatment is necessary. Twice a week the patient has a sublimate irrigation, the bowels may need some attention, as does the bladder frequently, during the first few days. After removing the sutures we are practically done with the patient, unless there be some misplacement still to correct, or some further need of applications to the canal. Of these operations eighteen have been performed by the Martin, ten by the Emmett, and the remainder by the tube method. The average stay in the hospital has been seventeen days after operation.

A lacerated cervix will present several different appearances. There may be a conical cervix of about normal size, or one in which one or both of the lips are much hypertrophied, everted, and eroded, or a condition of apparent partial or entire absence of cervix, with the os more or less indefinite, lacerated in various directions, and several cicatricial bands passing off to different portions of the vagina. Most kinds are easy and successful of repair, but the latter offers many difficulties, and the repair may not, in all cases, remove the associated symptoms. Often, however, we may start apparently with a mere nothing for a cervix, and by properly denuding and approximating may be able to build up the organ so that when healed it will present a normal appearance, and the patient be cured. The instruments and materials used are: Speculum, bullet forceps, dilator, sound, curette, scissors, knife, tenaculum, needle-holder, straight, half, and full curved needles, silk for sutures, and rubber drainage-tube.

Some surgeons are opposed to operation on the cervix, yet they are but very few, as compared with the many who would say all in its favor. Of its beneficial results and its necessity there can be no doubt whatsoever, and when we consider for a moment that many women who have suffered severely and in many ways, which no medical treatment could benefit, have been thoroughly restored to usefulness, having had nothing done aside from this operation; and, too, when we consider of how little danger it is to life when performed by an expert, as is shown in the heading of this article, — no one, I venture to say, will hesitate to recommend it when any hopes of benefit can be entertained. Lacerated cervix is, for the most part, an accompaniment of labor, and is caused by the shoulder or head of the child, or by instrumental manipulations. The question now presents itself as to what is the proper time for the repair which will produce the most perfect result.

Evidently that which could be regarded as only slight at the time,

which was not a cause of post-partum hæmorrhage, or which a little later did not seem to interfere with a satisfactory recovery of the patient, would not to the mind of any one suggest any operative interference; whereas in the same case some years later it might become a necessity to perform it in order to remove the then existing symptoms. On the other hand, if there should be post-partum hæmorrhage which could not be accounted for nor controlled, or the patient could not regain her natural strength at a suitable time, an examination of the patient is imperative, and if a rent is found which will account for the pathological conditions present, immediate repair must be advised and executed.

I shall not go into a detailed account of all the complications which, as will be seen, I have noted in connection with this class of cases. Only a few, those being intimately associated with conditions calling for this operation, will be of interest to discuss in this connection. There is one patient who was tortured by menstrual irregularities, for which, some time previously, she had had the cervix slit by a long posterior incision. This was repaired and an endeavor made to correct the flexion, cure the endometritis, and give tone to the uterine muscle. In two cases of polyp, the tube operation was performed, and the tumors were removed in the refreshing process, with cure. Subinvolution is intimately associated with laceration, and of this there are sixteen cases. This diagnosis was made when the depth of cavity was three and one-half inches and upwards, without hypertrophy of the cervix. When the uterine tissues are soft, and a little stimulation is required, the performing of Martin's operation, especially if there is elongated or hypertrophied cervix, will result most happily. The curette also plays its part by removing the diseased endometrium and aiding the process of involution. Next we may group the one case of epithelioma, six cases of incipient cancer, and sixteen of erosion. These were all cases in which the disease was confined to the lips, in which a high operation or hysterectomy seemed to be uncalled for, and the Martin or tube methods were employed. The erosions needed simple refreshing. Some of the cases were operated, now a year since, and to my knowledge not one has reappeared; on the contrary, all the patients seem to be in a satisfactory condition, and several of them I have reexamined at varying intervals.

In case of prolapse or procidentia, it would hardly be expected at first thought to improve the patient at all by this operation. It is in fact cured only by other operations, which will be discussed later; but here I will simply introduce the fact that the operation on the cervix and subsequent involutions of the uterus, has aided in the support of the pelvic viscera in a great degree. In an especially interesting case, that of epithelioma of the cervix, associated with very much hypertrophy of the

pelvic viscera, and a complete procidentia, the removal of the tissues beyond the ulcer has acted much as the performance of anterior colporrhaphy on cystocele or posterior colporrhaphy on rectocele as a cure for this case. At any rate, there has not been the least tendency to procidentia since it was operated.

Cases of gonorrhœa, in which the infection had not passed beyond the uterus, were happily treated by the curetting and cervix operations. One case of tuber infection, however, as reported before, after a short period of repose, again presented its characteristic symptoms. When adhesions are present, as noted in twelve cases, they should either be broken up by pressure, tampering, etc., before operating; or, if not very extensive, this can be done at the same sitting, some support being placed to keep the uterus in its new position.

There are of versions and flexions forty-eight cases associated with lacerations of the cervix, and needing restoration, that should be done either before or at the time of the operation on the cervix. Packing before or after operating to support the organs, tonic treatment for the uterine muscle, or the influence which is exerted by a proper tube in the canal at the time of the operation, each will have its own beneficial effect. Not all cases of versions or flexions will be entirely corrected in this manner, and it is expected that many would need some treatment of support with efforts also to increase the strength of the tissues, which often needs to be done wholly independent of the operation, either before or after.

Before closing I will call attention to one more class, that of chronic endometritis, of which we find seventy-six cases. This we might consider as an accompaniment almost of necessity, and, what is more, it may be the entire cause of the distressing symptoms for which the patient seeks relief. With this disease present we could not propose to operate upon the cervix without, at the same time, doing something for the diseased endometrium. This must be removed at the time of repairing the cervix, and of course we would not see wisdom in closing in a disease of the mucous membrane. This should be curetted, therefore, and the debris removed. Not much after-treatment is required to the endometrium in many cases, but some will be met in which a little healing application will be beneficial. Iodine, or carbolic acid with cocaine or electrical applications, can be made to the endometrium with much chance of success.

Seventy-four of these seventy-six cases of lacerations of the cervix, complicated by endometritis, which was treated by curetting, of course, were included in the table published in the last number of this journal. I do not wish to appear to augment the number of patients by classifying the operations in different groups for purposes of studying the results.

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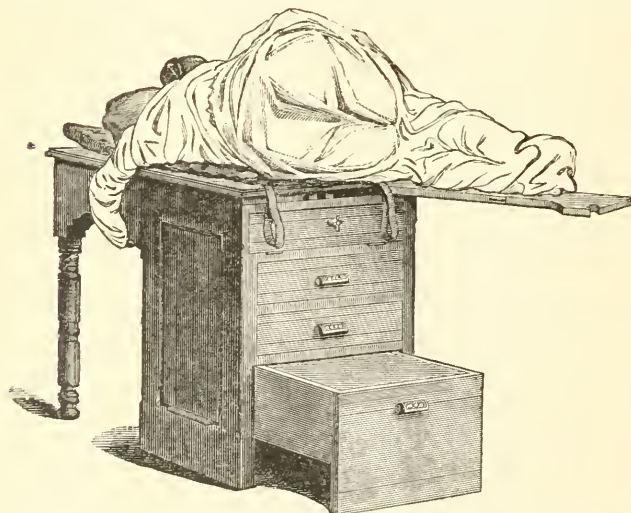
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A MONTHLY REVIEW

GYNÆCOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY.

EDITED BY
E. W. CUSHING, M.D.,
BOSTON.

WITH THE COLLABORATION OF

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AUGUST, 1888.

CONTENTS:

	PAGE		PAGE
ADDRESS DELIVERED BEFORE THE BRITISH MEDICAL ASSOCIATION AT GLASGOW, AUG. 7, 1888. <i>Thomas More Morton, M.D.</i>	131	PHOTO-MICROGRAPHY.—THE BEST MEANS OF ILLUSTRATING AND DESCRIBING PATHOLOGICAL MATERIAL. <i>Max Grawley Parker, M.D.</i>	248
ANALYSIS OF ONE HUNDRED COLLECTIVE ABDOMINAL SECTION.—REPORT OF ONE EXPERIMENTAL CASE. <i>Joseph Price, M.D.</i>	137	REPORT OF THE PRINCIPAL OBSERVATIONS FROM A STUDY OF SEVERITY-RIX CASE. <i>F. L. Post, M.D.</i>	251
REPORT OF A YEAR'S WORK IN THE METROCK FREE SURGICAL HOSPITAL FOR WOMEN. <i>E. W. Cushing, M.D.</i>	17	ORTHOPEDIC SOCIETY OF PHILADELPHIA.—THE PROSECUTIONS.—THE PRIMARY AND SECOND RESULTS OF OPERATIONS AT PENNSYLVANIA COLLEGE. <i>Cole</i>	254
PROLIFERATION SURGERY	20	EXPERIENCE WITH PNEUMOTHORAX AND ITS OPERATIVE RESULTS. <i>Gardner</i>	258
		REVISIONS	261
		HOSPITAL HISTORY	270

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FIG. 1.—See page 537. Prolapse size of child's head. Woman of 70 years. Over **A** at level of **B** os uteri; to the left, deep, incurable spreading ulcer, size of palm of hand.

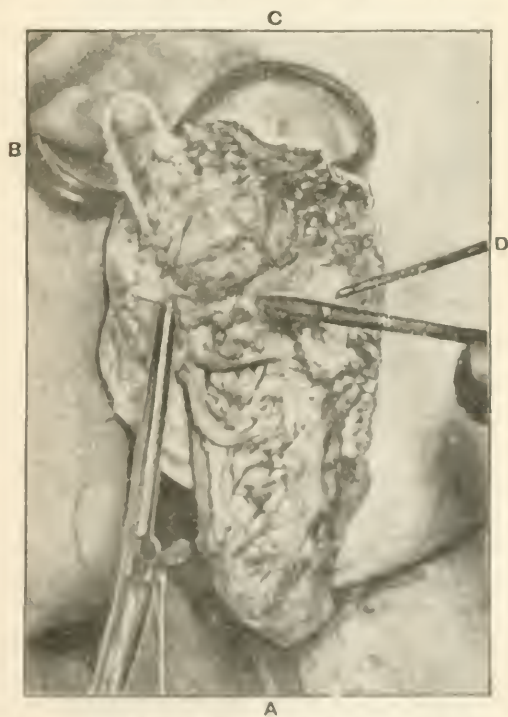


FIG. 2.—See page 538. Over **A** growth of Douglas with polypus. **B** = Lower, sigmoid, at level of **B** at the upper 6 cm. 10 cm. distance from fund of ovary, in long thin pedicle. **D** = Sigmoid in unpedicled cavity near. Under **C** almost fissured.

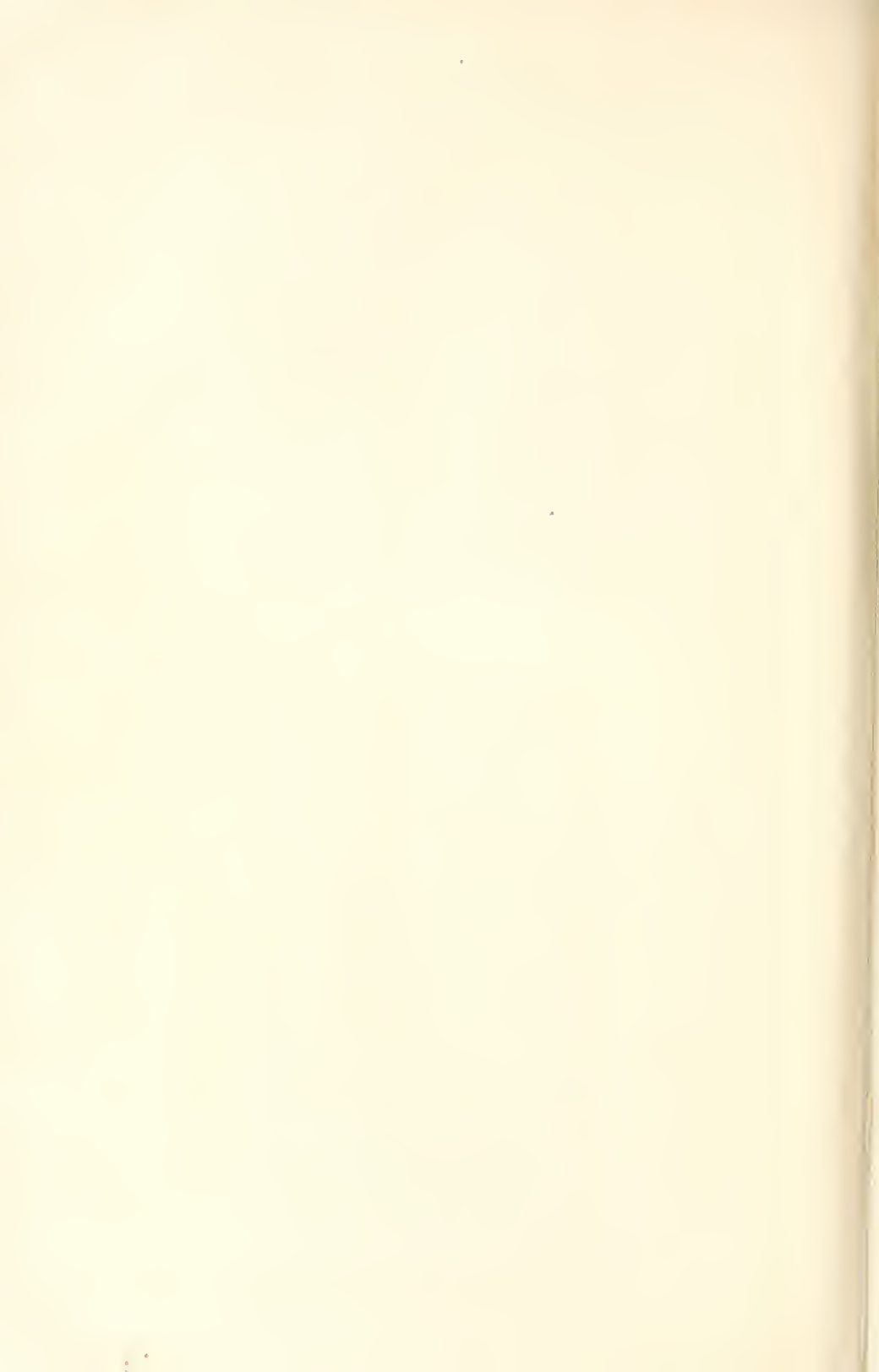




FIG. 3.—Same case. Double pouch and bladder pushed up, and wound united with silk. When man was then returned into pelvis, perfect anal recovery.

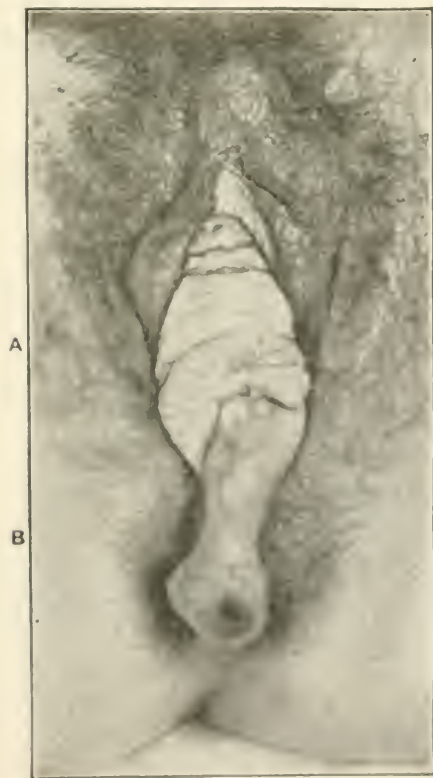


FIG. 4.—A—Transverse section of transverse pouch excised. B—Hemorrhoides ligated at point of





FIG. 5.—Complete prolapse. **A**—In centre of neck (bleed of cervix and adjacent part). Page 538.

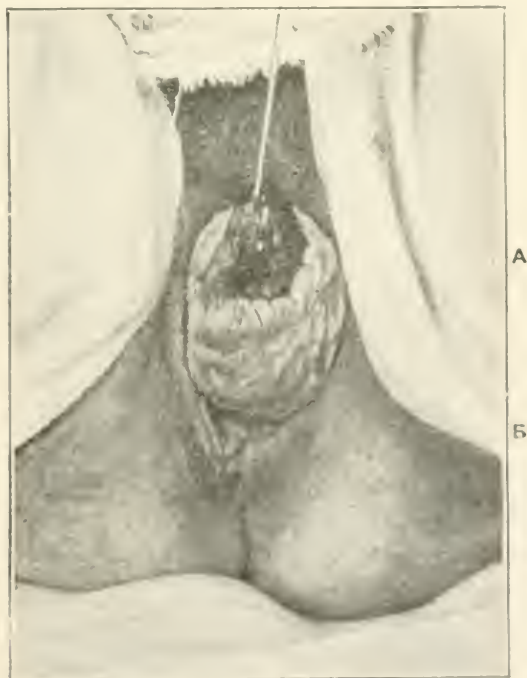
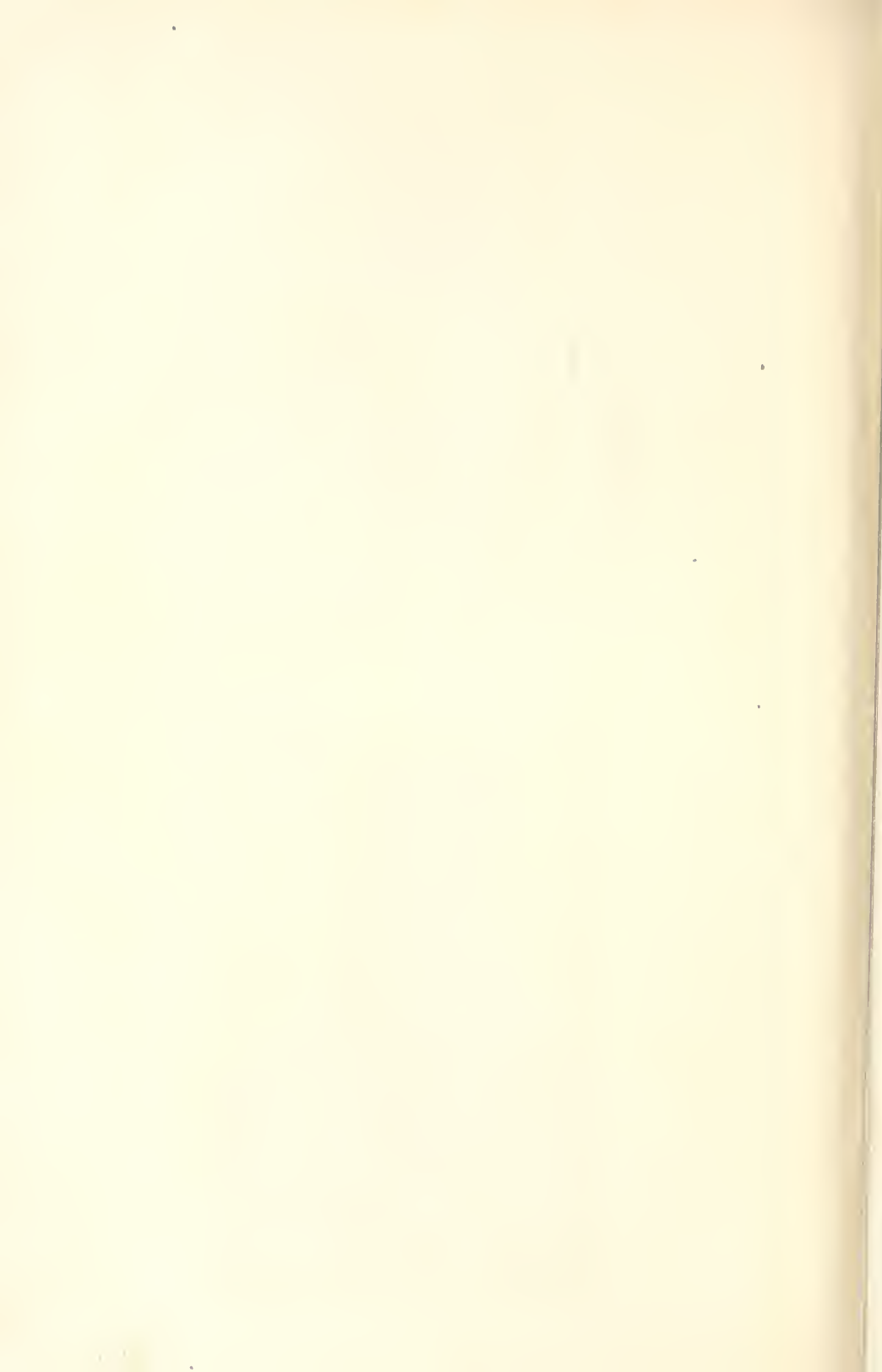


FIG. 6.—Same case. Shows gross prolapse. **A**. At level of **B** exposed perineum. Variation in position of cervix and adjacent part, perineum, and rectum. Complete prolapse.



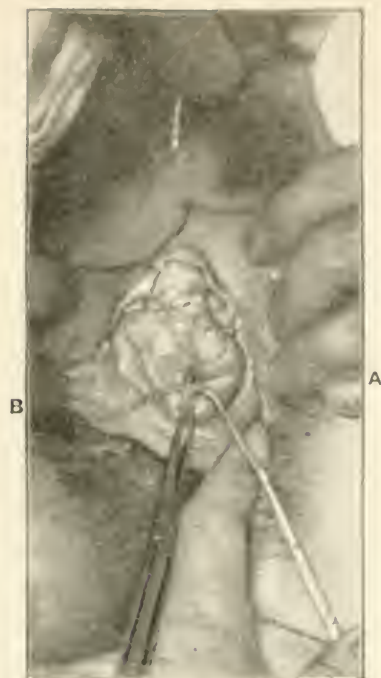


FIG. 7.—Vagino-cervical fistula (page 529) in middle line. At level of **A** in fig. 6. At level of **B** sound passes uteri. Cervix torn and ant. lip rolled up.

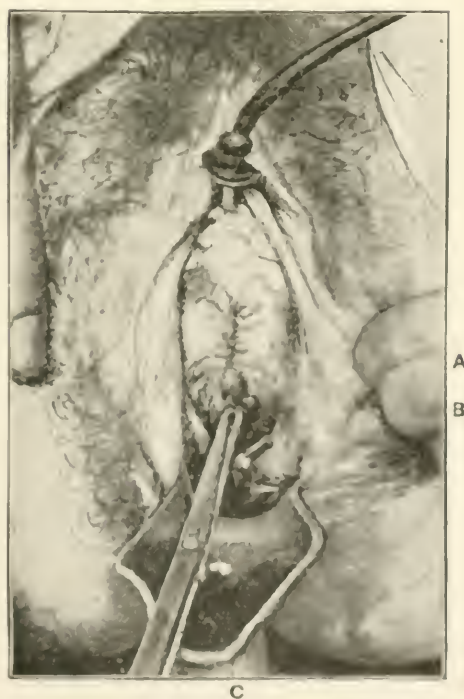


FIG. 8.—Same point. In middle line, at level of **A** (page 530) in fig. 6. At level of **B** (page 530) in fig. 6. **C**—Sound passing uteri. Cervix torn and ant. lip rolled up.

ANNALS GYNÆCOLOGY.

VOL. I.

AUGUST, 1888.

NO. 11.

ORIGINAL COMMUNICATIONS.

AN ADDRESS¹ DELIVERED AT THE OPENING OF THE SECTION OF OBSTETRIC MEDICINE, AT THE ANNUAL MEETING, BRITISH MEDICAL ASSOCIATION, GLASGOW, AUGUST 7, 1888.

BY THOMAS MORE MADDEN, M.D., F.R.C.S., ED.,

President of the Section.

Obstetric Physician Mater Misericordiarum Hospital, Dublin; ex-President Obstetric Section Royal Academy of Medicine; Physician St. Joseph's Hospital for Sick Children; formerly Examiner in Obstetrics and Gynaecology Queen's University, and Vice-President British Gynaecological Society, London.

GENTLEMEN. — I gratefully appreciate the honour of my election to the Presidency of this important Section of the British Medical Association, which I regard as a compliment to the Dublin School of Midwifery, with which I have been long connected, rather than to an individual otherwise so unqualified for the distinction as myself. I shall therefore trust to your continued indulgence for condonance of whatever shortcomings may be observable in my attempt to discharge the duties now intrusted to me.

The present meeting of the Association should, I think, be especially valued by the members of this Section, for it is to Scotland, and to the genius of her sons, that the twin sciences of obstetrics and gynaecology — which we are here met to cultivate — owe their earliest development in Great Britain; and to a large extent their recent progress is traceable to the same source.

Long before there was any systematic teaching of midwifery either in Dublin or in London, and fully twenty years before the foundation in the

¹ From copy sent in advance by the author.

former city of the great maternity hospital, — on the staff of which I served my apprenticeship to the obstetric art, — a Professorship of Midwifery was, in 1725, established in the University of Edinburgh, and I have had in my possession the ancient manuscript notes of the obstetric course delivered there in 1756 by Professor Young, as well as of the lectures of Dr. Hamilton, by whom he was succeeded. From that time the obstetric teaching of the Scottish schools has come down in an unbroken continuity of excellence to our own day, and its character has been amply maintained by the reputation of their *alumni*. Thus it was to William Smellie, a native of Lanarkshire, that our professional forefathers owed a “System of Midwifery” as far in advance of any that had preceded it as the obstetric science of these last twenty years of the nineteenth century has progressed beyond that taught in 1752 by Smellie. To the same writer is more especially due the credit of the first real improvement on Chamberlen’s original forceps, as well as directions for using that instrument, as he said, “on rational and mechanical principles,” which even yet might be studied with some advantage by modern obstetricians.

It was in this country also that the mind of William Hunter received its early training in that obstetric art which he afterwards so successfully cultivated and practised in London, and of which he there became the most distinguished of all its older British teachers. Nor even in this brief retrospect can it be forgotten that in the city wherein we are now assembled, modern intra-peritoneal gynæcological surgery was first anticipated in 1701 by Dr. Houstoun, in the curative treatment of an ovarian tumor by abdominal section. Whilst more than a century later it was to another Caledonian surgeon — Mr. Lizzars, of Edinburgh, whose early ovariectomy cases were published in 1825 — that the revival, although in a very different and improved form, of Houstoun’s first laparotomy operation is mainly due. I shall not attempt to follow further the long history of the obligations of our art to the older Scottish schools, or pause to offer my humble tribute of respect to the memory of one of their ablest teachers, — the late Sir James Simpson, whose name will be recalled as long as suffering humanity seeks relief in anæsthesia, and as long as obstetrics and gynæcology are cultivated. Nor need I here refer to the services to our branch of medicine of Dr. Matthew Duncan, who filled the position I now occupy at the last meeting at Edinburgh of this Association, or allude to the well-recognized gynæcological work of Dr. Keith, and of many other no less distinguished living Scottish authorities.

Whilst willingly acknowledging how much we owe to Scotland, I cannot omit a briefer reference to the similar labors of the Dublin School, although the credit of not a few of the obstetric advances that originated

there in bygone years has more recently been elsewhere appropriated. Thus, for instance, the employment of version as a substitute for craniotomy as advocated by some modern German and English writers, was first suggested in 1752 by Sir Fielding Ould, the second Master of the Dublin Hospital, and was revived a century later in the same place by the late Dr. M'Clintock, whose genius, erudition, and obstetric skill entitle him to remembrance even in our most oblivious of professions. In like manner the management of the third stage of labor by the method claimed as his own in the late Dr. Spiegelberg's recently translated "*Text-Book of Midwifery*," is practically almost identical with that followed in the Rotunda from time immemorial, as described several years ago in my edition of "*The Dublin Practice of Midwifery*." The resuscitation, moreover, of the use of the forceps, the prophylaxis of *post-partum* hæmorrhage, and many other improvements in the management of child-birth and the puerperal state—the introduction of which is claimed elsewhere—have, I may repeat, also emanated from the same practical school of midwifery.

The foregoing reference to the historic claims of the ancient Scotch and Irish centres of obstetric science might be readily expanded. Time, however, forbids my further trespassing either in this way or by any allusion to the better known services of the early fathers of English midwifery; and as Raynald, Willoughby, Harvey, Cook, Chamberlen, Chapman, Giffard, Denman, and the host of other pioneers of obstetric knowledge, many of whose lives and labors are so well chronicled in Dr. Aveling's erudite "*Biographical Sketches of British Obstetricians*," I shall, therefore, devote the remaining portion of this address to the more practical consideration of the results of some of the recent developments of obstetric and gynecological science.

The progressive improvement of midwifery practice has been strikingly evinced during the past few years. Thus the pathology and preventive treatment of intra-uterine death and abortion have been freed from much of their former obscurity and difficulty by the recent writings of Dr. Priestly. The prevalence of puerperal septicæmia, by epidemic outbursts of which, in my early days, I have repeatedly seen the crowded wards of a great maternity hospital decimated, has been largely diminished by the hygienic and antiseptic measures now adopted for its prevention. Whilst if septicæmia should still occur, we are now armed with more scientific means for the curative treatment of this disease which some years ago was generally classed amongst the incurable *apoplexia* of our art. In like manner, by the adoption of improved methods for the prevention and treatment of *post-partum* hæmorrhage, that once frequent

source of obstetric mortality, has been almost completely removed. At the same time the throes and pains of labor have been rendered more endurable by the employment of comparatively safe anæsthetics, such as the mixture of two parts of ether and eau-de-Cologne with one of chloroform, which, for nearly twenty years, I have found a generally efficient and agreeable anæsthetic in such cases. Moreover, by judicious instrumental assistance, we may now, in many instances, safely abridge the duration of that formerly often long-protracted period of parturient suffering, which, when a student, I have too often seen allowed to continue unrelieved for forty and fifty, and even for eighty, hours and upwards. Lastly, the former appalling frequency of child-destroying operations has been reduced in an exact proportion to the increasing employment of the forceps. Nor have the limits of the utility of this instrument, as a substitute for the cephalotribe, craniotomy forceps, cranioclast, *et hoc genus omne*, been even yet fully reached.

The Uses of the Forceps, and its Improvement. — The main reason why any embryotomic instruments are still included in the ordinary obstetric outfit, appears to me the fact that most midwifery practitioners do not recognize sufficiently the compressive power of the long forceps, and, moreover, rely exclusively on some one form of forceps, whether the head be above or within the pelvic cavity, and without reference to the kind of mechanical power — tractile, lever, or compressive — that may be specially required in each case. Desirable as it may be to carry as few implements as possible in the obstetric bag, it is, nevertheless, impossible to combine in any one instrument properties so distinct as those referred to. In operative midwifery there should, surely, be some definite proportion between the power employed and the resistance to be overcome. Hence it seems about as needless to resort to an instrument of such compressive and lever power as the double-curved long forceps, to assist delivery in an ordinary case of delay in the second stage, as it would be to employ a steam-hammer to crack a walnut.

I have endeavored to carry out these views in the two instruments now exhibited, which have been considerably modified and, as I think, improved in the course of experience since I first demonstrated the use of their original models. The first is a short, straight traction forceps, the blades of which are only six inches in length, and are so curved as to fit the fœtal head very exactly, and so widely fenestrated as to allow the scalp to protrude when applied, and thus protect the maternal passage during extraction. This instrument, as may be seen, is very portable, and, locking loosely, is easily applied; and being a really efficient tractor, as I have proved by experience of its use in upwards of three hun-

lured cases, may, therefore, be employed in nine-tenths of the cases in which any instrumental assistance is required, — namely, those in which delay arises from inertia in the second stage of labor.

The second instrument shown is intended only for cases of difficulty from disproportion or pelvic flattening. The blades are, therefore, of considerable length and strength, and are approximated by a powerful screw, by which the amount of compressive force exercised may be exactly regulated. The affixed traction rods are closed or separated by a simple mechanical arrangement. This instrument, as will be seen, is not only a tractor and lever, but is a compressor of great power, with which the foetal head may be gradually moulded out and compressed within the limits of viability, so as to admit of delivery through pelves from which a living child could hardly be otherwise extracted. I need hardly add that such an instrument requires very great caution in its use, and should be employed only in the exceptional cases for which it is designed, and as a substitute for embryotomic implements.

Recent Progress of Gynecology. — The development of this branch of medicine since our Association last met in Scotland has been still more remarkable than that effected in the practice of midwifery during this period. Thus, for example, only a few years ago many of the most frequent forms of endo-uterine and peri-uterine disease were beyond the diagnostic and remedial reach of gynecologists, then unprovided with those means of rapidly and thoroughly dilating the cervical canal, or with the many other methods of direct investigation by the aid of which any well-educated practitioner may now recognize and treat endo-uterine, ovarian, tubal, and other intra-peritoneal and pelvic complaints that baffled detection or treatment. Nor in those pre-antiseptic days could have been anticipated the wonderfully successful results since realized from laparotomy operations, and more especially ovariectomy, as well from some still more recent developments of intra-peritoneal surgery in tubal and other diseases, including even peritonitis and cancer of the uterus, — the latter a subject which has been recently elucidated in Dr. J. Williams' Harveian Lectures. In the last-named cases, however, it is a debatable question whether we should persevere further with the intra-peritoneal procedure for the removal of the uterus introduced by Freund, in view of the better results obtained from the vaginal method advocated by Dr. Martin, of Berlin; and also whether in the latter case the operation should be limited, as recommended by Dr. Williams and Dr. Brathwaite, to the removal of the cancerous portion, and not be extended to the extirpation of the entire uterus.

Only within the time referred to has the general correctness of Dr.

Graily-Hewitt's views with regard to the importance and treatment of uterine displacements and flexions become commonly accepted. Neither were the symptoms and appropriate treatment of ovarian displacements understood until a more recent period, when attention was directed to them by Dr. Barnes' able paper on this subject in the "American Journal of Obstetrics," and in a minor degree, perhaps, also by a memoir of mine on the same topic in the Transactions of the Irish Academy of Medicine. Nor is it so long since the bearing of cervical lacerations on pelvic pathology, as first demonstrated by Dr. Emmet, of New York, first became recognized in this country. Finally, the diagnosis, importance, and curability of diseases of the uterine appendages, such as hydro and pyo-salpinx, together with several other of the causes of female suffering and death, were, in like manner, practically ignored by gynæcologists until within a very recent period.

Influences of Prejudice and Fashion in Gynæcological Progress.

— In the history of many of the successive developments of gynæcology just referred to, we may observe proofs not only of the progress of our art, but also of the two causes which have temporarily retarded its advancement. The first is the opposition generally offered in matters medical, as in most others, to all innovations, and the consequent reaction by which the pendulum of professional opinion is swung from one extreme to the other, exaggerated over-estimation thus generally succeeding to earlier adverse prejudices. The second is the potent influence of fashion on medical opinion and practice; for, strange as it may be why this should be the case, it is, nevertheless, true that —

"In physic, as in fashion, we find
The newest is ever the rage of mankind."

This is strikingly illustrated in gynæcological practice, in which it now seems almost as much the fashion to ascribe various obscure female complaints to ovarian and tubal disorders, as, a few years ago, it was to attribute similar ailments to uterine flexions and displacements; or as, ten years earlier, it was the mode to credit them to chronic inflammation, or what was then regarded as ulceration of the neck of the womb: or yet, a century previously, to set them down, in the phraseology of our professional ancestors, to the "spleen" or "the vapors."

Gynæcological Specialism and Woman's Place therein. — In this connection I may venture to observe that I cannot agree with those who are opposed to the admission of women into the practice of our department of medico-chirurgical science for which their sex should apparently render them so especially adapted. I can see no valid reason why

any well-qualified practitioner, male or female, should not be welcomed amongst us. Nor, if there are women who prefer the medical attendance of their own sex, does it seem fair that in this age of free trade they should not be afforded every opportunity of exercising their discretion in a matter so personal to themselves. For my own part, I greatly doubt that, in these countries at least, "the Lady Doctors" (as they are termed) will ever replace the ruder sex in the general estimation of their sick sisters. But, if not here, elsewhere there is unquestionably an ample field for female practitioners, and more especially in India and other Oriental countries, where millions of suffering women and children are fanatically excluded from the possibility of any other skilled professional assistance; and I therefore think that such practitioners are entitled to admission into our ranks in the British Medical Association.

Laparotomy in Relation to Gynecology. — Foremost amongst the proofs of modern gynecological progress, the most signal is that afforded by the results of abdominal surgery in the treatment of ovarian tumors, as demonstrated in countless cases at home and abroad and in this country, more especially in the practice of Sir Spencer Wells, Dr. Keith, Mr. Lawson Tait, Dr. Bantock, Dr. Savage, Mr. Thornton, and other specialists in this department of operative surgery, which, not very many years since, was so loudly and unfairly decried. Whether this should encourage the present frequency of resort to laparotomy in the various other intra-peritoneal morbid conditions in which it is now advocated, or not, is, however, another question, and one which, I think, may be still advantageously reconsidered.

Treatment of Fallopian Tube Diseases. — With respect to the tubal diseases, to the operative treatment of which so much attention is now devoted, and which I have elsewhere fully discussed, I shall only here again observe that, whilst recognizing the fact that in some instances of pyo-salpinx and hydro-salpinx the removal of the diseased uterine appendages affords the only available means of treatment, and fully appreciating the surgical skill by which operations for this purpose have been brought to their present perfection, I have not, in my own experience, found laparotomy operations as generally necessary in such cases as they are apparently now deemed by others. On the contrary, I am confirmed, by increasing observation, in the belief that in some instances these tubal diseases, more especially in cases of hydro-salpinx, may terminate favorably without any surgical treatment, and, moreover, that in other cases such collections, whether purulent or serous, may be evacuated by cautious aspiration through the vaginal roof. Very recently I had an opportunity of again proving the advantages of this method of treatment in the

case of a lady, who, after many months of suffering, was sent to me from a distant country to have the affected uterine appendages removed, but whom I succeeded in relieving of her trouble, with the assistance of my friend, Dr. Duke, by aspirating the Fallopian tube, and thus removing about ten drachms of serous fluid from the distended duct. I would, therefore, still urge the expediency of a fair trial of other less serious methods of treatment before resorting to the extirpation of the uterine appendages in these cases generally.

Operative Treatment of Uterine Tumors.—It would be impossible, within the limits of this address, to enter at length into the consideration of a question so large and so controversial as the general necessity for surgical interposition in the treatment of uterine fibromata. This, I am glad to see, will be brought before you during this meeting by those eminently qualified to speak on the subject: and I trust that in the ensuing discussion new light may be thrown on the comparative merits of the various intra-peritoneal and vaginal surgical procedures advocated in such cases, as well as on the value of electrolytical treatment. Nor, in this connection, should the possibility of arresting the growth of these tumors in some instances, by appropriate medical treatment, as well as the greater probability of thus effectively checking hæmorrhage so occasioned, and more especially by the free administration of ergot and iodide of potassium, to which I have elsewhere called attention, be entirely lost sight of.

With regard to the former or surgical method, I may, however, venture to repeat that, in the majority of cases of interstitial and sub-peritoneal uterine tumors, no active treatment whatever appears to me essential, inasmuch as such growths seldom, if ever, destroy life, and in many cases become arrested in their development and quiescent in their symptoms at the menopause, or may even possibly disappear altogether in the course of time. The latter event is, however, far too exceptional to have much influence in determining the expediency of surgical treatment, and more especially that by oöphorectomy, which is unquestionably called for in the case of fast-grown fibroids, giving rise to otherwise uncontrollable urgent hæmorrhagic or pressure troubles, particularly when occurring in young patients.

With regard to hysterectomy, although exceptional cases may occur in which this procedure is necessitated, the average mortality that has followed its performance is such as to forbid its general employment, as an operation of election, in a disease the average mortality of which, when left to nature, is so comparatively insignificant. Whilst as to myotomy, in view of its too common results I can only repeat that it would appear to me a method by which a patient may be effectually removed from a

tumor, rather than as an operation by which a tumor can be safely removed from a patient.

Treatment of Uterine Fibroids by Electricity. — Although I have so nearly exhausted the allotted limits of this address, I cannot omit a few words in reference to the latest and most promising of the methods available in the treatment of uterine fibromata, — namely, that by electricity. Within the past year and a half I have had occasion to try this method, in some ten instances, in my hospital and private practice; and so far as the arrest of hæmorrhage is concerned, the result was most satisfactory, the bleeding being thus arrested in six of these cases. But with regard to the cure of the disease from this treatment, the possibility of which had been demonstrated in the experience of Dr. Apostoli and others, who had employed it on a much larger scale, I can only say that whilst I have not as yet seen the complete subsidence of the tumor effected in any of the cases so treated by myself, in three of them its apparent bulk became distinctly diminished even after six weeks or two months' treatment of this kind. It should, perhaps, be added that in all these instances I used Dr. Apostoli's original plastic clay abdominal electrode, the current used being, of course, monopolar and acting directly on the growth by the intra-uterine pole, and was obtained from a powerful Leclanché battery of an estimated maximum current strength of two hundred and fifty milliamperes. In the first of my cases I employed the electrolytic negative current, but after a little experience I abandoned this, and in the subsequent trials used only the positive current, which, although non-energetic as a galvano-caustic, is far less liable to give rise to trouble, and from its decided hæmostatic action is more suitable to these cases of large hæmorrhage-producing tumors, in which alone this or any other active treatment seemed to me generally necessary.

If, however, the results obtained by Dr. Cutter, and, still more conspicuously, those recorded by Dr. Apostoli, from the employment of electricity, — namely, permanent benefit in ninety-five per cent. of the cases of fibromata thus treated by him, — should be confirmed, as I hope may possibly be the case, by the experience of those who are here about to discuss this disease, then we might well congratulate ourselves on having at last arrived within sight of the long-sought-for safe and effectual curative treatment of uterine tumors.

The foregoing *résumé* of some of the recent developments of obstetric and gynaecological science, imperfect as it is, affords a sufficient vindication of our branch of medicine from the aspersions which have been poured upon its followers. These advances and their results are surely more than enough to show that those by whom so much has been accom-

plished are engaged in no narrow specialism, but, on the contrary, should rank high in that noble and ever-progressive Profession of Medicine whose great objects are the prolongation of life and the relief of every form of human suffering.

In conclusion, gentlemen, it only remains for me again to thank you for the honor you have here conferred upon me and for the patience with which you have listened to this address.

AN ANALYSIS OF ONE HUNDRED CONSECUTIVE ABDOMINAL SECTIONS. — REPORT OF SOME INTERESTING CASES.

BY JOSEPH PRICE, M.D., PHILADELPHIA.

THE object of the following analysis is not to discuss various abdominal operations, nor modes of dealing with complications, but merely to show pathological conditions, and the frequency of complications likely to tax the resources of the surgeon. The list includes single and double pus-tube, single and double ovarian cysts, broad ligament cysts, single and double hydro-salpinx, dermoid cysts, hæmatoma, ovarian abscess, chronic salpingitis, papillomatous tumors of the ovaries, tuberculosis of tubes and ovaries, fibroid uterus, tubal pregnancy, broad ligament pregnancy, uterine myoma, pelvic abscesses, post-puerperal peritonitis, tubercular peritonitis, diseases of the liver and the occurrence of gall-stones, a variety of intestinal lesions, and some malignant tumors of the abdominal contents.

Seventy per cent. (70 %) of these cases present distinct complications. Some of the complications noted were much more difficult to deal with than a casual glance would indicate. For example, adhesions constitute the surgeon's greatest difficulty, and in many of these cases the adhesions were extensive, involving the ileum and sigmoid flexure, the bladder, uterus, ureters, and large blood-vessels.

Again, many of the complications were not difficult to overcome. The operation on any single abdominal pelvic organ, aside from the complications enumerated, is comparatively simple in the light of modern surgery. But these complications determine at once the nature and severity of the operation, calling into play the best skill of the surgeon, and rendering experience and judgment — not of necessity age — important elements of success. I am prone to express the opinion that in every abdominal operation the assistant, as well as the operator, should be a

man of experience. Positive diagnosis of the exact condition, or even of the approximate condition, is in many of these cases an absolute impossibility. The point to determine is, "Is the condition of the patient such as to require operative interference?" This determined, the operation decides the precise nature of the trouble, and in this way may be of assistance in deciding the nature of other obscure cases.

The classification in the following analysis is made for convenience and brevity. Of the one hundred cases reported, fifty-six were done in the service of the Philadelphia Dispensary in the courts and alleys of this city, with no deaths. Thirty-seven were private cases, with twelve deaths. Seven were hospital cases, with one death. The explanation of the mortality is, that in the Dispensary and Hospital service the patients are seen and operated on before they become completely bed-ridden and exhausted. In the private cases, operation is frequently resorted to as a forlorn hope, and without expectation of much benefit. This is partly due to the conservative position of medical men on the subject of abdominal surgery. The success of the operations given below was gratifying in the extreme. Much of it I attribute to free drainage. Forty-one per cent. (41%) of the cases were drained. In a majority of the cases in which drainage was used, the abdomen was flushed with copious irrigations of hot distilled water.

In all of these operations the strictest attention was paid to absolute cleanliness, but no solutions were used as antiseptics. One other point of some importance is the administration of the anæsthetic. This should always be given by an expert, who is willing to devote his entire attention to the condition of the patient without reference to the operation. I am convinced that such an anæsthetizer will save the operator many so-called profound surgical shock cases, and probably some lives.

ANALYSIS OF ONE HUNDRED CONSECUTIVE ABDOMINAL SECTIONS.

Pus-tube of one side:—

Uncomplicated	1
Complicated by ovar. cyst, same side, and general adhesions	7
Complicated by ovar. cyst and parovar. cyst, same side	1
Complicated by ovar. abscess, same side, and necrotic patches on bowel, general firm adhesions	1
Complicated by suppurating ovar. cyst and suppurating cyst of broad ligament, adhesions universal, especially strong on bowel	1
Complicated by suppurating strangulated dermoid cyst, general purulent peritonitis, general adhesions	1
Complicated by salpingitis and ovaritis, opposite side, pelvis choked with adhesions	1

Complicated by opposite side, too adherent to remove	3
Complicated by multiple cellular tissue abscesses, general adhesions to intestine	2
Complicated by purulent septicaemia	1
Pus-tube, both sides : —	
Uncomplicated	4
Complicated by double ovar. cystoma	2
Complicated by double ovar. cystoma and general intestinal adhesions	2
Complicated by blood cyst of one ovary and cyst of other ovary, firm adhesions, and purulent peritonitis	1
Complicated by ovar. cyst, one side — post-puerperal	1
Complicated by ovar. simple and blood cysts, one side	1
Complicated by parovarian cyst, one side	1
Complicated by ovar. abscess, one side	1
Complicated by ovar. abscess and cyst of broad ligament, one side	1
Complicated by double ovar. abscess	1
Complicated by double ovaritis and multiple cell-tissue abscess, intestinal adhesions	1
Complicated by double ovaritis and multiple cell-tissue abscess, septicaemia,	1
Complicated by one ovary too adherent to remove	1
Complicated by one ovary and tube too adherent to remove	1
Ovarian cyst, one side : —	
Uncomplicated	1
Complicated by suppuration and general purulent peritonitis	1
Complicated by hydro-salpinx, one side, omentum adherent to pelvis	1
Complicated by hydro-salpinx, one side, intestines matted together	1
Complicated by sarcoma of the liver	1
Complicated by salpingitis, one side, and very firm adhesions to uterus	1
Complicated by dermoid cyst, opposite side, general firm adhesions	1
Complicated by broad sig. cyst, same side, hydro-salpinx, opposite side	1
Ovarian cyst, both sides : —	
Uncomplicated	1
Complicated by intimate adhesions to bladder	1
Complicated by uterine myoma	1
Complicated by parovarian cyst, one side	1
Complicated by double chronic salpingitis, omentum adherent to pelvis	1
Complicated by double chronic salpingitis, retroflexed and adherent uterus general, very firm adhesions	1
Broad ligament cysts, one side : —	
Uncomplicated	2
Complicated by matted intestines	1
Parovarian cysts, one side : —	
Uncomplicated	3
Complicated by blood cyst of ovary, same side	1
Complicated by ovarian cyst, same side	1
Complicated by hydro-salpinx and ovarian cyst, opposite side	1

Hydro-salpinx, one side : —	
Complicated by chronic ovaritis adhesions to intestine, and universal	2
Hydro-salpinx, both sides : —	
Complicated by general adhesions	1
Chronic salpingitis, both sides : —	
Complicated by firmly adherent ovaries	1
Complicated by cirrhotic ovaries and blood cyst of one ovary	1
Complicated tubercular ovaries	1
Complicated by atresia of cervix uteri, obliteration of vagina, vesico-vag- inal and recto-vaginal fistulae	1
Dermoid cysts, both sides : —	
Complicated by strangulation and peritonitis	1
Hæmatocele : —	
Complicated by pelvis-bound uterus	1
Complicated by double ovar. disease and general peritonitis	1
Post-puerperal ovarian abscess, one side	1
Double ovarian papillomata	1
Miliary tuberculosis, both tubes and ovaries	1
Fibroid uterus : —	
Uncomplicated	3
Complicated by general firm adhesions, pelvis-bound	1
Complicated by pelvis-bound ovary	1
Tubal pregnancy : —	
Complicated by hæmatocele	1
Complicated by retroflexed and adherent uterus	1
Complicated by rupture, general peritonitis, and adhesions, degeneration of tissues	1
Broad-ligament pregnancy, 7½ months	1
Suppurating myoma of uterus : —	
Complicated by ruptured sinus and general peritonitis	1
Old discharging pelvic abscesses	2
Post-puerperal peritonitis	1
Tubercular peritonitis : —	
Uncomplicated	1
Complicated by matted intestines and cystic urachus	1
Abdominal dropsy from diseased liver	1
Enlarged liver and gall-stones	1
Strangulated ventral hernia : —	
Complicated by general peritonitis	1
Perforation of the bowel, feces in abdominal cavity	1
Strangulation about ileo-cæcal valve	1
Sarcoma, omental and pelvic	1
Sarcoma of uterus, general adhesions, 10 inches of larger intestine involved	1
Sarcoma of kidney	2
Sarcoma of abdominal viscera	2

REPORT OF SOME INTERESTING CASES.

The following cases were operated on at the Gynecian Hospital: —

I. — Mrs. S., white; age, 30; married five years; two children, last three years ago; no miscarriages; menses regular; first labor instrumental. Complaining since last labor of pain in back and ovarian regions, increased by motion or defecation, dyspareunia, burning micturition, and profuse whites; very costive. Says two years ago had a "sore lump in right side" that opened into vagina and discharged pus. Examination (six months ago) showed lacerated perineum and cervix, small recto-vagino-cele. Uterus in good position. Left ovary enlarged and prolapsed, with tubal trouble on same side. Improved somewhat with local treatment, until six weeks ago, when she returned with history of delayed period and pain in right ovarian region. Examination showed fulness and great tenderness on right side. — Diag.: tubal pregnancy. (?)

Abdominal section: 6. 23, '88. Removal of right tube and ovary for ruptured blood cyst of tube and broad ligament. Pelvis full of clotted blood. Adhesions to bowel and omentum. No evidence of extra-uterine pregnancy except amount of free blood clot and the ruptured cyst at the pavilion of the tube. Left appendages normal. Irrigation and drainage. Op. Price. Convalescent.

II. — Mrs. F., white; age, 21; married one year; one child nine weeks ago; complaining since labor of great pain in abdomen, tympanites, rapid pulse, high temperature, chills, etc. Was admitted to hospital in this condition. Had been in labor three days attended by a midwife. Diagnosis: post-puerperal peritonitis.

Abdominal section: 6. 25, '88. Removal of mass from right side. Mass was inflammatory in character, involving bowel and omentum, and was firmly adherent to abdominal wall, right iliac fossa, bladder, and uterus. Complete separation of all adhesions; removal of thickened and adherent portion of omentum; irrigation and drainage. Op. Price. Convalescent.

III. — Mrs. B., white; age, 34; married eighteen years; one child sixteen years ago; no miscarriages; menses regular. Complaining of no menses for three months; pain in breasts; colic and vomiting; diarrhœa; painful micturition; decidedly red vaginal discharge after any exertion; great pain in left groin; discharges of blood and pus from bowel at irregular intervals.

Examination. — Blue vagina; chocolate-colored mucoid discharge; cervix hard; uterus enlarged and tender; very tender cystic mass to left and behind uterus. Diag.: extra-uterine pregnancy, — made by assistant at Philadelphia Dispensary.

Abdominal section: 6, 28, '88. Removal of left tube and ovary for extra-uterine pregnancy. Uterus, intestine (ten inches), omentum and left appendages adhering firmly. Fetal sac at fimbriated end of tube, placenta between folds of broad ligament below and behind uterus. Adhesions separated, sac emptied by canula. Placenta, sac walls, tube, and ovary removed. Uterus was large as fist and soft on entering the abdomen, but contracted to size of egg during operation. Copious irrigation floated up a three months' fetus which had escaped from sac during enucleation. Glass drainage. Op. Price. Two days after operation patient underwent the throes of labor and passed complete decidua per vaginam. Convalescent.

IV. — Miss S., white; age, 21; never pregnant. Menses regular; scrofulous diathesis. Been in America three years. Mother died in confinement, father died of some acute disease. Was perfectly healthy until four months ago, when menses ceased during first day of flow on account of cold. Three days after struck her right side violently against a door. Paid no attention to bruise, until five days after she noticed a hard, painful lump in right umbilical and iliac regions. Two weeks after injury diarrhœa set in. Stools very black and offensive. Pain inside much increased just before stool. For two or three weeks micturition was painful, the urine being dark and thick "like tar;" for past two weeks has not been so painful, and is normal in quantity and appearance. Has lost weight, strength, and color very rapidly, though locomotion is not excessively painful.

Examination shows a mass size of a child's head, extending from iliac fossa to renal region on right side, slightly movable, very tender. Some irregularity toward median line of abdomen. A peculiar tympanitic note developed by percussion, dissimilar to bowel tympany, but showing presence of gas. Qualitative and microscopic examination of urine normal. Diag.: carcinoma of intestine.

Abdominal section: 7, 1, '88. Mass firmly adherent to abdominal walls in right iliac and lumbar regions. Cæcum, ascending colon, and several feet of small intestine involved, with greatly thickened walls and enormously enlarged lymphatics. Resection of twenty inches of large and small intestine. Small portion of bladder removed with mass, also portion of omentum. Copious irrigation. Bowel stitched in half its circumference and sutured to abdominal wound. Op. Price. Died in twenty-six hours of exhaustion.

The following cases were seen in consultation with attending physicians, and operated on at their homes; consequently the histories are not so fully noted: —

V. — Mrs. S., white; age, 41: seven children, last eight years ago: two miscarriages before last child; menses regular. Health perfect until six weeks ago, when, after a delayed menstrual period, three weeks, she was seized with sudden acute pelvic pain and symptoms of concealed hæmorrhage. From this attack had irregular profuse hæmorrhage from uterus. Has had two or three attacks of pain follow similar to the first.

Examination. — Uterus in front and immovable. Firmly adherent irregular mass on right side. Tortuous, boggy mass on left side. Great tenderness. *Diag.*: probable tubal pregnancy.

Abdominal section: 7, 4, '88. Large quantity of clotted blood free in abdominal cavity, cyst on left side containing one quart of clotted blood. Sac walls cheesy and friable. Free hæmorrhage from large venous plexuses. Enucleation very difficult, sac tearing to shreds. Firmly adherent ovarian cyst on right side completely enucleated. Hot irrigations and sponge packing failing to control the venous hæmorrhage from left side, absorbent gauze was firmly packed over the bleeding surfaces, while a glass drainage-tube was inserted into the right lateral peritoneal sac. *Op. Price.* *Note.* — Second day, no pain, no hæmorrhage, no flatulent distention, and but slight nausea, although on account of the persistent hæmorrhage the operation was tedious and the anaesthesia prolonged. *Note.* — Sixth day, tube out, condition excellent.

VI. — Mrs. B., white; age, 35; married nine years; six children, four miscarriages, all since last child, and last one three months ago. Complaining for an indefinite period of pelvic pain and free, irregular bleeding. *Examination*: small adherent sub-peritoneal fibroid on posterior wall of uterus. Both ovaries and tubes enlarged. *Diagnosis*: salpingitis and fibroid.

Abdominal section: 7, 5, '88. Removal of both appendages. No drain. *Op. Price.* Fifth day doing well.

VII. — Mrs. G., white; age, 31 years; married eleven years; four children; three miscarriages; last, one year ago. Complaining for six weeks of persistent acute pain. Feeble and emaciated, high temperature, and very rapid, feeble pulse; condition alarming.

Abdominal section: 7, 5, '88. Removal of right pus tube; adhesions to bowel and abdominal walls very dense. Hæmorrhage from adherent surface very free. Irrigation and drainage. *Op. Price.* Fifth day doing well.

VIII. — Mrs. W., white; age, 33; married thirteen years. No children; one miscarriage (at three months) nine years ago. Menses regular and general health good. For four months preceding the operation menses were absent, and all mammary and gastric symptoms of

pregnancy developed, with considerable pain and tenderness in right ovarian region. Doubting pregnancy on account of long sterility, examination showed uterus small and well in front, no evidences of intra-uterine pregnancy. Well-developed cystic mass on right side of and posterior to uterus, and an irregular tortuous one on left side. Her family physician tried to dissipate the first mass by electricity, holding two or more sances. About the fourteenth week patient had a sudden attack of great pain, with irregular bleeding and a *shreddy* discharge. Diagnosis: extra-uterine pregnancy.

Abdominal section: 7. 6. '88. Great omental and intestinal adhesions over uterus and fetal sac, very strong, and hard to separate. Left tube and ovary were partly overlying the fetal sac, and were strongly adherent to it and to adjoining parts. Removal of left tube and ovary by enucleation. Then removal of right tube and ovary, the fetal sac being in the fimbriated extremity of the tube. The tube was much thickened, and the sac was full of clot and degenerating placenta. Irrigation and drainage. Op. Price. Fourth day, tube out, doing well.¹

It will be observed that in this group of consecutive cases, four of them were, from the history and operation developments, probable extra-uterine pregnancies. Two of them were proved to be so, beyond a peradventure, by the specimens removed. The last case well illustrates the folly of feticide by electricity. It is, perhaps, the first case in which abdominal section was necessary to save the patient's life so soon after the application of electricity, but it was time enough to give the electricity a chance to do good, and also to demonstrate its inefficiency.

Timely surgical interference would have been a much wiser procedure, for one has only to reflect of the many inflammatory changes and the numerous adhesions to all surrounding viscera that a tubal pregnancy creates, to realize the danger of delay or trifling with uncertain means. I believe that in this last case the left tube and ovary might have been saved to the patient by early surgical interference, for, beyond the dense adhesions that had involved it, it was comparatively unharmed. These adhesions had evidently spread from the inflammatory changes in the sac, following the use of electricity, in order to kill the fetus, and its dissolvent powers are evidently erroneous, the molecular changes produced by electrolysis are decidedly "retrograde," even to the extent of producing rupture, leakage, and inflammation.

As yet we have no definite information as to what good electricity

¹ 9, 6, '88. All this group of cases, except the cancer of intestine, ended speedily and completely (recovery), notwithstanding its being undiagnosed early, and almost all such could be better prepared.

will do in such cases; on the other hand, we have positive knowledge of what timely surgical interference will accomplish.

Many of the cases on record as cured by electricity are unreliable, occurring as they do in the hands of general practitioners with absolutely no knowledge of pelvic surgery, some never having even seen an abdomen opened, and most of them unable to distinguish a distended tube from a retroflexion. Why should they express themselves so confidently when they are without some knowledge of treating *pelvic troubles* from *above* as well as *below*?

The *knife*, with copious irrigation and free drainage, is the remedy *par excellence*. I cannot understand how a surgeon, who has had large experience with serious troubles in the pelvic basin, can ever counsel the trial of electricity in so dangerous a condition as tubal pregnancy. Recently some loose statements have been made concerning Mr. Tait's work, to the effect that Mr. Tait was claiming operations for tubal pregnancy upon insufficient evidence; throwing away specimens without sufficient examination, etc. These statements simply show lamentable ignorance of the numerous and valuable specimens now in the British museums, and a disregard of the accurate knowledge of Mr. Tait's work by numerous American surgeons. As these charges originate in a source totally incapable of making either an accurate observation or a truthful statement, they will in no wise depreciate Mr. Tait or his work.

In connection with this group of four cases, occurring in my practice in one week, it is interesting to note the observation of a justly celebrated pathologist, Dr. Henry F. Formad, coroner's physician of this city; also interesting when compared to Mr. Tait's great work.

Within a very short period Dr. Formad has found in his post-mortem work eighteen deaths due to ruptured tubal pregnancy, none of which were examined before death. Their pain and collapse was attributed to "colic or cramps," and no effort made to save their lives. In every instance he found large quantities of blood in the abdomen. These deaths ALL occurred in laboring women and before the TWELFTH week. In one instance the patient was watched for five days by a physician, and the trouble not recognized. This class of cases, for many years, was grouped as "death due to accidental hæmorrhage," — no definite cause assigned for hæmorrhage.

N.B. — In justice to American surgeons I want to protest against the statement, made by numerous American journals, that the American surgeons are a unit on the use or value of Faradization in extra-uterine pregnancy. Many operators have *never* used it, and wholly and unqualifiedly reject it.

REPORT OF A YEAR'S WORK IN THE MURDOCK FREE
SURGICAL HOSPITAL FOR WOMEN.

BY E. W. CUSHING, M.D., BOSTON, MASS.

At the suggestion of various professional friends, and as a means of showing my sense of responsibility to those physicians who have intrusted their patients to me, I have concluded to make a brief *résumé* of the work of the last year, during which this hospital has been under my charge.

The patients treated here are mostly from the various cities and country towns of New England, and from the north-eastern part of New York State, perhaps one-third being from Boston and its suburbs. Although impecunious, they are not of the class which are found in the free hospitals in large cities, — that is, they are not robust laboring women, and few are of Irish or of other foreign birth. Any one acquainted with New England rural life knows of the relatively large number of well-educated and eminently respectable women in our towns, who, nevertheless, have very little ready money, and who therefore gladly and properly, when requiring an operation, apply for admission to a free hospital of this sort. I mention this to explain the average physical condition of the patients sent here. Slight and apparently feeble women, they yet have the strong vitality of their race. If they have little blood to spare, they have always had enough to eat; if not of powerful muscles, they have never been exhausted by excessive physical labor, and very seldom have they been worn out by rapidly recurring childbirths.

In various numbers of the *ANNALS OF GYNECOLOGY* my efficient assistant, Dr. Burt, has reported in detail such cases as seemed of special interest, or were types of groups of cases occurring here. I shall, therefore, confine myself largely to general observations on the cases included in the following tables. It is proper to observe here that the same patient may be entered in the first table under several different heads: e.g., one woman may have ruptured perineum, lacerated cervix, rectocele, endometritis, etc., or another may have antelexion, dysmenorrhœa, and endometritis; or similarly subinvolution, erosions, and retroversion may occur in the same patient. At one sitting, and on one patient, there may be a curetting, repair or amputation of the lacerated cervix, anterior colporrhaphy, posterior colporrhaphy and repair of the ruptured perineum, and closure of the rectum. It is impossible to so arrange the cases into groups which will explain just what was done to each woman at one sitting, but

as a rule I may say that I usually do at once whatever has to be done, seldom, for example, making a second and separate operation of the repair of the perinæum, unless, where there has been at the first sitting an extensive operation on the cervix and anterior vagina in an elderly patient, it seems prudent to shorten the time under ether necessary for the whole operation by dividing it into two stages. In other words, I am not deterred from closing up the perinæum by fear of failure of closure of the wound in the cervix and anterior wall of the vagina.

I have endeavored to be scrupulously careful in operating to guard against any septic infection; not considering here laparotomies, every other operation, even down to passing a sound for diagnosis, is performed under a continuous sublimate irrigation, with all the care as to instruments and fingers which is now customary among respectable surgeons. The result has been most satisfactory. There has been almost no trouble, or fever, or worry, or doubt as to the union of the parts coöpted. Where in isolated cases there has been failure to unite, I could almost always trace it to some error of the after-treatment, or wilfulness of the patient, or to performance of an operation immediately after admission to the hospital, while the patient was in an enfeebled state, and before the processes of nutrition and assimilation were able to supply the system with proper material for uniting the coöpted surfaces. For such cases my experience shows that a longer stay in the hospital before operation, with systematic attention to nutrition, is the best safeguard against failure of union. At the same time habits of using morphine, or of the excessive consumption of tea, to which such patients are usually addicted, can be overcome, and the patient can be put generally and locally in the best condition for operation and primary union.

For after-treatment I have depended largely on sublimate douches; where cotton or wool packing is indicated, iodoform has been, until recently, on the whole the most satisfactory antiseptic agent. The vile smell of this medicament, however, is a disadvantage, as is the high price of iodol. A mixture of hydronaphthol and boracic acid replaces it well in some cases, but is apt to cause erosions of the vaginal portion and even slight hæmorrhages. The great desideratum being a non-irritating, non-poisonous, insoluble powder, slowly decomposing in contact with the bodily tissues, and able to prevent fermentation, I have lately introduced and employed the *sulphite of calcium* with the happiest results. This is a fine white powder answering all the above conditions; it is very cheap (37 cts. per lb.), and answers perfectly the purposes for which iodoform is used. I shall speak of it more at length in another place.

A question which naturally arises, and which might easily take the

form of a criticism, is as to whether all these operations were necessary; whether many of these conditions were not remediable by ordinary local treatment. The answer to this is that as this hospital is open only to cases requiring operation, the patients were sent in here for this express purpose, usually, if not always, after long courses of local treatment by one or several physicians. Everyone knows that it is not easy for practitioners in the country to institute and continue long courses of treatment for women who, living perhaps at a considerable distance from the office, are able to pay little or nothing. The amount of such work which is done is really astonishing, but when surgical treatment is really what is indicated and this can be shown to be practically free from pain and danger, it is not necessary to prove that an operation is really indispensable in order to show that it should be adopted. Take, for instance, a case of slightly lacerated cervix with subinvolution and perhaps some retroversion and overstretched perinæum. I am far from denying that such a woman can be rendered comfortable, and eventually restored to comparative health, without operation. At the same time she is far luckier if she is courageous and well-advised enough to submit to an operation and be restored to the *status in quo ante bellum*, bidding a glad farewell to her pessary, her tampons, douches, iodine, etc., etc.

The women treated here were almost all cases which had undergone treatment of all kinds; they had often exhausted their funds in paying for medical services. They came under operation gladly. The result shows with how little danger.

Table 1 shows the whole number of cases, excluding laparotomies, treated here during the last year. They are arranged according to the various symptoms recorded.

Some of them have already been reported by Dr. Burt in this journal. In his tables of the cases of curetting and of trachelorrhaphy it was accidentally stated that the cases were those occurring in one year, whereas the time really covered by his table was twenty months. Naturally, however, during the first months after the opening of the hospital the wards were not very full. The most important group of cases in Table 1 is that of ninety-eight cases of laceration of the cervix for which trachelorrhaphy was performed and ninety cases of curetting for endometritis. Most of the cases of the first group belong also to the second, for the following reasons:—

The laceration of the cervix gives rise to little or no trouble in itself, and thousands of women go through life with badly torn cervixes without any suffering. When there is simply erosion of the cervical lips from friction, etc., it is usually cured by local treatment by the family physician.

and does not get into a surgical hospital. The real sufferings of the women are from the endometritis which complicates the laceration of the cervix. I have elsewhere¹ described at length the true nature of erosions of the os uteri and their significance. I am now more than ever convinced that much of the accepted teaching on the subject of laceration of the cervix is erroneous. The pelvic congestion and uterine enlargement I consider as the consequence and not the cause of the endometritis. The latter with consequent subinvolution is usually a remnant of some mild septic trouble after labor or abortion, or, if it has come on independently, the lacerated cervix is to be considered as the door through which the disease has entered. The diseased mucous membrane can be treated by rest, packing, douches, local applications, etc., or it can be scraped out. However useful the former mode of treatment may be in private hospitals, or in private practice, I am well satisfied that by curetting there is a great saving of time, trouble, and suffering. Therefore in these cases there has usually been a curetting preliminary to sewing up the cervix, and few cases of laceration have undergone operation where there was not an endometritis present.

Again, I have to differ with much current theory in regard to the separate occurrence of cervical and corporeal endometritis. No doubt they *may* exist separately, but practically the mucous membrane of the fundus was found thickened and diseased in most of the cases where curetting was performed.

In the cases above reported the greatest advantage accrued to the patients. In only two was there any inflammatory trouble, requiring confinement in bed for some weeks. From what I know now I am led to think that in these cases there was preëxistent trouble in the tubes.

The fifty-eight cases of ruptured perinæum reported included most of the cases of prolapse.

At the meeting of the American Medical Association,² in 1887, I reported my method of operating for ruptured perinæum by joining Schröder's system of buried catgut sutures in layers to Jenks' method of splitting the flap. More or less of the vaginal flap is left according to the case, but I now remove more than formerly in order to prevent the formation of a pocket, and to leave the posterior wall of the vagina smooth and even. The strength of the perinæum is given by bringing together the pelvic fasciæ and tissues in the sides of the wound by the buried suture. The closure of the mucous membrane and of the external skin is a superficial matter, for which carbolized silk is very convenient.

¹Transactions of Connecticut State Med. Society, 1887. Ann. of Gynecol., Oct. '87.

²Journal American Medical Association, Oct. 27 '87.

By carrying the incisions well up on each side of the columna vaginalis, as recommended by Martin, the vagina can be narrowed to any extent desired; but the support of the uterus does not depend so much on narrowing of the vagina as on the strong thick perinaeum which is formed by this operation, which is especially useful when the rent extends into the rectum.

In the latter case the split edge of the recto-vaginal septum forms the sides of the new rectum, which is carefully darned with fine silk from the raw side until the sundered ends of the sphincter can come together and form again the anus. Above the fine silk the tissues are brought together by fine catgut in one or two layers, and then the operation goes on as if there had been no rent in the rectum. All my cases of ruptured perinaeum were dismissed cured, although some required a secondary operation on the flap of vaginal mucous membrane too much of which I formerly retained.

I present with this figures showing three of the cases of prolapse, one with a curious hypertrophy of the posterior lip, one with ordinary ulceration of the vaginal portion, and the third with an extraordinary ulcer of the extruded wall of the vagina. The general method of operating on these was an amputation of the cervix, after Martin's¹ method, if the cervix was hypertrophied; then an anterior colporrhaphy, after Martin's method, removing a large elliptical piece of the anterior vaginal wall, including the muscular layer. For a posterior colporrhaphy I used my perinaeum method as above described. One case was that of an elderly unmarried woman where the small uterus came down and protruded, looking much like a penis. Here I performed Alexander's operation, but after getting up apparently cured the patient forced the uterus down again while foolishly straining at stool. I therefore united the anterior and posterior walls of the vagina with catgut, after making a raw surface as large as a half-dollar on each aspect. The surfaces united perfectly and kept the uterus well in place.

The most important and difficult case is shown by the figures 1, 2, 3.

All the cases of prolapse were dismissed cured and free from any necessity of wearing any mechanical support.

The cases of cystocele and rectocele were also cases of ruptured perinaeum, and were cured by the operations above described. In cases even of bad cystocele I was often able to dispense with anterior colporrhaphy by building up a strong perinaeum with the buried suture.

¹ "Pathology and Therapeutics of the Diseases of Women," American Association.

TABLE I.

OPERATIONS OTHER THAN LAPAROTOMIES.

From July 1, 1887, to July 1, 1888.

Cases.	Operation Performed.	No.	Cured.	Relieved.	Not Relieved.	Died.
Adenoma of uterus	Vaginal total extirpation	1	1			
Fibroid of uterus	Vaginal total extirpation, by Dr. A. Martin	1	1			
Cancer of uterus	Vaginal total extirpation, by Dr. A. Martin	1				1
Rupture of perinæum	Perineorrhaphy	58	58			
With prolapse in 10 cases						
With rectocele in 17 others						
Cystocele	Anterior colporrhaphy	12	12			
Cystocele and prolapse	Anterior colporrhaphy	10	10			
Laceration of cervix	Trachelorrhaphy	98	98			
Elongation of cervix	Amputation of cervix	2	2			
Endometritis	Dilatation and curetting	80	80			
Endometritis and stenosis	Dilatation and curetting	8	8			
Anteflexion	Dilatation and curetting	2	2			
Retroflexion						
Retention of secundines hemorrhage	Dilatation and curetting	3	3			
Mucous polyp of uterus	Dilatation and curetting	5	5			
Cancer of uterus	High amputation and cautery	3		3		
Cancer of uterus	Sharp-spoon amput'n and cautery,	20		20		
Sloughing submucous uterine myoma	Removal with spoon-saw	1				1
Bleeding submucous uterine myoma	Curetting and swabbing with iron,	5		5		
Retroversion of uterus, with adhesions	Forcible bimanual reposition under ether (Schultze's operation),	6	5	1		
Double vagina	Excision of septum	1	1			
Atresia of vagina	Plastic operation	1		1		
Cicatrix of vagina	Plastic operation	1	1			
Vesico-vaginal fistula	Closure	1	1			
Caruncle of urethra	Excision	6	6			
Vulvo-vaginal gland, cyst	Extirpation	3	3			
Vulvo-vaginal gland, abscess	Extirpation	2	2			
Ulcer of labium majus	Curetting and plastic operation	1	1			
Cervical glands, abscess	Extirpation	2	2			
Abdominal and pelvic abscess	Incision and drainage	5	5			
Axillary abscess	Incision	2	2			
Abscess of leg	Incision	1	1			
Felon of finger	Incision	1	1			
Necrosis of jaw	Removal of dead bone	1	1			
Necrosis of finger	Removal of dead bone	1	1			
Periostitis of shin, fistula	Removal of dead bone	1		1		
Periostitis of knee, ulcer	Removal of dead bone	1	1			
Necrosis of coccyx, old fracture,	Excision	2	2			
Hæmorrhoids	Sewed through with catgut, and cut off	9	9			
Stricture of rectum	Forcible dilatation	1		1		
Ulcer of rectum	Curetted and cauterized	1		1		
Talipes	Tenotomy	1	1			
Cancer of breast	Extirpation. (All healed; none returned yet)	8		8		
Cancer of skin	Extirpation. (Healed; not returned yet)	1		1		
Lipoma	Extirpation	2	2			
Hernia	Radical operation	1	1			
Total		373	329	42		2

TABLE II.—LAPAROTOMY FOR THE REMOVAL OF OVARIAN AND PAROVARIAN TUMORS.—Form 1.

No.	Operator.	Date of Operation.	Age.	Married or Single.	No. of Child.	No. of 1 ap. dren.	Time since first noticed.	Size and Nature of Tumor.	One or both Ovaries.	Adhesions.	Drainage.	Hospital or Private.	Result of Operation.	Remarks.	Repeated elsewhere.
1	E. W. Cushing, Boston.	Oct. 25, '87	35	M.	0	0	3 mos.	Multilocular cyst of ovary, 40 lbs.	One.	Extensive.	No.	H. R.	H. R.	Pelvic abscess formed and was opened from vagina 4 weeks after operation; left hospital in 10 weeks.	H. Med Surg. Journal.
2	"	Nov. 28, '87	34	M.	0	0	7 mos.	Small unilocular cyst of left ovary.	One.	Firm.	No.	H. R.	H. R.	Had supposed herself to be pregnant, much omental fat and abdominal distention; left hospital in 3 weeks.	No.
3	"	Jan. 20, '88	52	S.	0	0	15 yrs.	Parovarian cyst, 15 lbs.	One.	None.	No.	H. R.	H. R.	Left hospital well in 5 weeks. Is now well.	Ann. of G., Apr., '88.
4	"	Jan. 31, '88	37	M.	0	0	1 yr.	Parovarian cyst.	One.	None.	No.	H. R.	H. R.	Complicated with pregnancy of 4 months; healthy child born at term. No stretching of scar.	Ann. of G., Apr., '88.
5	"	Feb. 13, '88	35	M.	1	0	3 mos.	Papillomatous cyst of broad ligament.	One.	None.	No.	H. R.	H. R.	Left hospital 4½ weeks after operation.	Ann. of G., May, '88.
6	"	Apr. 4, '88	29	M.	1	0	3 mos.	Multiloc. cyst of each ovary 2½ and 4 in. diameter.	Both.	None.	No.	H. R.	H. R.	Left hospital 3 weeks after operation.	No.
7	"	May 3, '88	39	M.	4	0	1 yr.	Multiloc. cyst, 18 lbs.	One.	Extensive.	Glass.	H. R.	H. R.	Had dangerous symptoms from ether during operation. Left hospital in 3½ weeks. Died a few weeks afterward of acute phthisis. No abdominal trouble.	No.
8	"	May 17, '88	42	M.	6	0	5 yrs.	Solid papillomatous tumors of each ovary weighing 2½ and 3½ lbs. 50 lbs. ascitic fluid.	Both.	None.	Glass.	H. R.	H. R.	Enormously distended with serous fluid, uterus prolapsed. All intestinal and peritoneal surfaces covered with military papillomata, with many as large as peas. Wound healed and drainage tube removed. Gradual recurrence of ascites. Death from exhaustion in 25 days.	No.
9	"	June 25, '88	23	S.	0	0	Discovered on examination in hosp.	Cyst of left ovary, holding about 4 oz. bloody serum.	One.	None.	No.	H. R.	H. R.	Had been unable to work for two years and had been in bed 3 months owing to uterine hemorrhages. Restored to health and menstrual regularity.	No.

TABLE III.—LAPAROTOMY FOR REMOVAL OF OVARIES NOT THE SEAT OF TUMOR.—Form II.

No.	Operator.	Date of Operation.	Age.	Married or Single.	No. of Children.	Duration of Disease.	Pathological Condition or Symptom necessitating Operation.	One or both Ovaries.	Adhesions.	Treatment of Pedicle.	Drainage.	Hospital or Private.	Result of Operation. (Recovery or Death.)	Effect of Operation upon the condition requiring it.	Remarks.	Reported elsewhere.
1	E. W. Cushing, Boston.	Dec. 15, '87	34	S.	0	4 yrs.	Bleeding myoma.	Both.	No.	Internal catgut.	No.	H.	R.	Perfect recovery of health. Cessation of hemorrhage.	Tumor shrank largely in 6 months. Patient is at work as house-keeper.	No.
2	"	Apr. 23, '88	24	S.	0	5 yrs.	Menstrual hysterо-epilepsy.	Both.	No.	"	No.	H.	R.	Has had slight fits since; violence much diminished.	Operation requested by family physician, by patient and her parents.	No.
3	"	June 7, '88	33	M.	3	2 yrs.	Abscess in right hypogastric region.	One.	Whole sac of abscess adherent.	"	Glass; yes.	H.	R.	Recovered her health.	Had been bedridden 2 years. The trouble came on soon after labor; abdomen had been once opened by another surgeon, who pronounced the disease a cancer, and closed the abdomen.	No.
4	"	June 20, '88	27	M.	0	4 yrs.	Double pyosalpinx.	Both.	Yes; firm.	"	Glass.	H.	R.	Recovered.	.....	No.

TABLE IV.—LAPAROTOMY FOR OTHER PURPOSES THAN THE REMOVAL OF OVARIES.—Form III.

No.	Operator.	Date of Operation.	Sex.	Age.	Duration of Disease.	Pathological Condition or Symptoms necessitating Operation.	Nature of Operation.	Drainage.	Hospital or Private.	Result of Operation. (Recovery or Died.)	Effect of Operation in Condition requiring it.	Remarks.	Reported elsewhere.
1	E. W. Cushing, Boston.	July 10, '87	F.	36	2 wks.	Laceration of small intestine in labor (instrumental); loss of all nutriment per vagina.	Abdominal section; union of refreshed ends of sloughed intestine.	No; unobtrusively.	H.	D.		Patient was sent in in bad condition for operation, and losing strength continually. Died, septic, 3d day.	No.
2	"	Aug. 5, '87	F.	33	2 yrs.	Double papillomatous growth of broad ligament enclosing uterus.	Removal of tumors and hysterectomy. Shoemaker's stitch and internal treatment of pedicle.	Glass; abdominal.	H.	D. 3 day.		The growths were very abundant; deep into pelvis; autopsy showed no change from pedicle, which looked well; no pus; septic.	Ann. of Gyn., '88, May.
3	"	Dec. 30, '87	F.	30	5 yrs.	Large, bleeding, painful myoma.	Hysterectomy; internal treatment of pedicle.	H.	H.	D.		Never fully resected. Died, septic, 3d day.	No.
4	"	Jan. 5, '88	F.	30	3 yrs.	Stricture of rectum and dilatation of bowel above it; small fibroids of uterus; arm peritonitic bands of adhesions.	Freed bowel by tearing up adhesions; removed ovaries to hinder growth of fibroid which compressed intestine.	Vaginal rubber tube.	H.	D.		Autopsy: no peritonitis; gut dilated and ulcerated. Death, apparently from pulmonary thrombosis, 2d day.	No
5	"	Feb. 27, '88	F.	34	6 yrs.	Large fibroid; could not work.	Hysterectomy; extraperitoneal stump; rubber ligature and catgut shoemaker's stitch.	No.	H.	R.	Perfect recovery.	Now at work in factory.	No.
6	J. Price, Philadelphia.	Mar. 10, '88	F.	37	4 yrs.	Adhesions of uterus and intestines to roof of pelvic abscess, which had formed after labor two years previously, and had burst into vagina and rectum.	Loosening of adhesions of uterus and of intestines.	No.	H.	R.	Final perfect recovery.	This case had seemed hopeless, as sublimite injections could not be used, since they went into the rectum through the isthmus. After this operation the rectal opening closed. Abscess cavity was twice afterwards curetted under ether, and under Dr. Hunt's persevering care the patient finally recovered.	No.

Of the cases reported in Table I. the histories of several have already been given in this journal, and others of the most important will be published from time to time, so that it is not necessary to say more about the individual cases in this place. The one death which occurred merits further explanation. The patient, who had long suffered from uterine hemorrhage, was sent into the hospital by Dr. E. B. Kellogg, with a high temperature, 103° F., flowing badly. Examination showed that a fibroid tumor, with which the patient was known to be affected, was sloughing and presented itself at the os uteri. Under ether a mass about two inches in diameter and very foul was removed, the uterine cavity irrigated, and several more masses removed with the spoon-saw. It was obvious that more of the tumor remained, but it did not seem safe to attempt to do more. Under frequent uterine irrigations and the use of ergot the patient appeared to be making a good convalescence. The hemorrhage ceased and the temperature became nearly normal, when suddenly, eight days after the operation, a mass some three inches in diameter was extruded. The patient soon began to suffer from symptoms of obstruction of the bowel, with stercoreaceous vomiting. It was inferred that the sudden contraction of the uterus, which was surrounded by old adhesions, had drawn upon some of the latter in such a way as to obstruct the intestines. The patient and her friends declined a laparotomy, which was recommended, and she died without fever in two days, of the intestinal obstruction.

The six cases of Shultze's operation, or the bimanual replacement of a retroverted and adherent uterus, were satisfactory and interesting. These were all patients who had suffered for years, and had received various and persevering treatment. The operation, as it is known, consists of lifting the uterus with two fingers in the rectum, which is filled with water, and with the other hand on the abdomen pressing down behind the fundus, gradually pushing it forward and stripping away the adhesions which bind it. Some of the bands can also be separated by the fingers from the rectum. This procedure appears very useful in a limited number of cases, where there is not disease of the tubes, but merely a fixation of a retroverted uterus. Five of these cases were entirely relieved in so far that the uterus was replaced, although they were dismissed wearing pessaries. These could not be endured previously. The sixth patient had such firm adhesions on the right side where the ovary was enlarged that I dared not separate them, fearing tubal disease. She was, however, relieved of the acute retroversion, and is now able to earn her living.

These tables, arranged after the manner of those published in the "*Pittsburg Medical Review*," require little comment. As a class, the operations were of more than average severity. Of the ovarian and

parovarian tumors, as shown in table first, all recovered but one, who lived twenty-five days, and died from an extension of the original disease. There were, namely, thousands of little papillomatous grafts studding the whole peritoneal surface, keeping up a chronic serous effusion, which finally exhausted the patient. The operation was performed far too late, after she had been for five years under the treatment of a cancer quack, who had taken all her money, and finally abandoned her when death seemed imminent.

In Table II. is a case of oöphorectomy for hystero-epilepsy ; this operation was done at the request of the patient herself, and of her parents, and of her physician. It is too early yet to judge of the results, as far as the nervous disorder is concerned. As the epilepsy was distinctly connected with the menstrual period, there is much hope of a successful recovery. I may here refer to a similar case where I removed the ovaries in this hospital, in November, 1887, for religious melancholy, with erotic excitement and masturbation. I reported this case some three months afterwards, and she was then improving, but did not finally recover her health and her strength until some eight months after the operation. She then began to earn her own living again, and is now happily married to a widower with six children.

The cases of salpingitis here reported were all severe, and such as to completely disable the patients. Since the 1st of July I have operated in this hospital on four other cases, which, with histories and symptoms, will, in due time, be reported all recovered.

I am convinced that there is a very large number of such cases otherwise incurable scattered among our New England population. For these an operation for the removal of the diseased appendages offers the best prospect for relief. The infamous persecution to which Dr. Baker, of Boston, was subjected for very properly performing Tait's operation has probably made the profession more unwilling to operate on these cases than it otherwise would have been. It is to be hoped that the triumphant vindication of Dr. Baker, and that the collapse of the suit against him, by drawing attention to this question, may be the means of furnishing the relief to many women who, at present, are suffering most miserably.

Table IV. comprises a number of very grave cases ; one of these has been already published in detail. Of the three other hysterectomies, one was for malignant disease ; of the two for myoma proper, one died. This is the only death of the whole in which I feel that the patient ought to have got well. It was the only one where I used drainage by the vagina. I shall not be tempted to drain in this way again, as, whatever the theoretical advantages, it is so very difficult to surely guard against infection,

and to be sure of proper escape of fluid. Hysterectomy, at the best, is very grim work. The cases where it would be of easy performance can usually get along without it, and in cases where it is apparently required, the conditions are such as to make the operations very difficult and dangerous. It is greatly to be hoped that the treatment of myomata by electricity will diminish the number of cases which require hysterectomy. If half of what is claimed is confirmed by experience, electrolysis is the coming treatment for fibroids. Unfortunately there is at present no public institution in this vicinity where systematic electrical treatment of fibroids is furnished. This will probably be remedied before long, however. I cannot say that my experience with electricity has been as favorable as that of some of its more ardent advocates. I have at my office a good constant battery of 40 Leclanché cells, and am treating some half-dozen cases by Apostoli's method. They all profess to feel better and stronger, the hæmorrhages are less, the tumors seem a trifle smaller, and notably more movable. If by success with electrolysis we mean that patients can worry along somehow until the menopause without a hysterectomy, then the treatment is apparently reasonably successful. I fear, however, that however useful it may be for women who have money and leisure, its application to the needs of the impecunious and laboring classes will always be restricted. It is difficult, and not without danger, unless extreme care and pains be used; it requires costly apparatus, not readily portable, and takes up a great deal of the physician's time. I therefore fear that operative surgeons must still go on doing hysterectomy when the patient demands relief, fully understanding the dangers.

Several of these cases of laparotomy have been already reported in detail; there is little I need to say here in regard to operative procedure. I never use the spray, having no faith in it. I place great confidence in most copious and thorough washing out of the abdomen with clean hot water, taking little pains to remove the whole of this, or get the abdomen dry, if I am sure that it is clean. A drainage-tube is used where many adhesions have been separated. I am careful, in all cases, to sew up the peritoneum and the sheath of the recti muscles. In none of these cases has there been any hernia, although one woman gave birth to a child less than five months after the laparotomy. I depend a great deal on rectal alimentation, especially during the forty-eight hours after the operations. For efficient assistance at these operations, for the preparations beforehand and conscientious care afterwards, I am greatly indebted to my assistants, Drs. Burt and Brigham. In all my endeavors I have been kindly assisted by the management of the hospital, which has supplied whatever seemed necessary for the comfort and safety of the patients.

PUBLISHERS' NOTICE.

THE assertions in a pseudo-medical journal, edited and published anonymously in this city, respecting the alleged ownership and control of the ANNALS OF GYNÆCOLOGY by the "Murdock Liquid Food Co.," are destitute of any substantial foundation. Neither that company, nor any member of it, nor any other corporation or individual, except the undersigned and the editor of the ANNALS OF GYNÆCOLOGY, has any interest in the same, of any kind whatever, nor any sort of control over it.

Mr. Murdock had faith enough in this journal to give us a very liberal contract for advertising for one year only. This was a mercantile arrangement which was perfectly regular, and such as is open to any other reputable and responsible firm which is willing to make a similar contract. The text of the ANNALS is under the exclusive control of the Editor, and our subscribers know that nothing has ever appeared in the reading matter which might appear like a puff for any advertiser.

We trust that any journals which have unwittingly and in good faith copied any untrue statement about the ANNALS will be courteous and just enough to take notice of this explanation.

We have to thank the editors of the "Philadelphia Medical and Surgical Reporter" (May 26, 1888), and of the "Pittsburg Medical Review" (June, 1888), for so promptly and freely and fully correcting the errors into which they had been led, as shown by statements published in previous numbers of those journals.

We are pleased to add that our method of presenting this journal to the profession directly through the mails has resulted satisfactorily in a large list of subscribers. In accordance with the notice on the cover of the first number the price of this journal for next year will be \$2.00, or, with the supplement, \$3.00. The second volume will commence with the October number.

ROCKWELL & CHURCHILL.

PHOTO-MICROGRAPHY. — THE BEST MEANS OF ILLUSTRATING AND TEACHING PATHOLOGY.

BY MOSES GREELEY PARKER, M.D., LOWELL, MASS.¹

PHOTO-MICROGRAPHY is the art of producing enlarged pictures of microscopical objects, by projecting the image of the object through the microscope, or combination of lenses, and catching this image, many times enlarged, on the sensitive film.

Micro-photography is a term sometimes used to express the same thing, but erroneously, as it is the art of producing miniature pictures of objects so minute as to require a magnifying glass for their examination. Thus we see that photo-micrography is the reverse of micro-photography; the one being the art of obtaining a large picture of a minute object, the other the art of obtaining a minute picture of a large object; while photography is the art of fixing the image produced by the camera, or combination of lenses, on the sensitive film.

Photo-micrography dates back to the discovery of Daguerre, published in 1839. After Daguerre came Reade, Donne, Hodgson, Kingsley, and Talbot, early workers in this attractive field.

After these, many in France, Germany, England, and America took up this most interesting study; among the latter Woodward stands pre-eminent. His advantages in Washington enabled him to obtain photographs of diatoms which have never been surpassed.

Koch first used photo-micrography to delineate bacteria; his first publication was in 1877, in which he speaks in the highest terms of the method.

By photo-micrography we can demonstrate more clearly, and teach more accurately, the minute changes constantly taking place in disease, than by any other means.

Photo-micrography is entirely void of any mental impression conveyed by the observer, through the engraver, to the picture.

A photo-micrograph is the true picture engraved by the constant, faithful, all-observing artist "Light," as the lens sees it; and we all know that the lens sees vastly more than the human eye, therefore is the instrument used to record scientific investigations.

The oculist tells us that all eyes are not alike, and consequently do not see alike. The result is sometimes difference of opinion, and here the photo-micrograph comes in to settle the question.

It is of the greatest aid in microscopic research, as we have seen,

¹ Read before the International Medical Congress

when used for illustration on the screen in the section of gynæcology. The gentlemen used also the most beautiful and attractive colored microscopical specimens in their illustrations, but all depended on photo-micrographs to illustrate the detail of disease, for in no other way can this be brought out as well.

I shall not, in this paper, describe the process of making photo-micrographs, as this has been so well done in this country by Woodward,¹ Sternberg,² Walmsley,³ Piersoll,⁴ Y. May King,⁵ and others, but say to the beginner, much time can be saved, fewer plates spoiled, and more satisfaction obtained, by taking a few practical lessons from a good instructor at first, rather than work the art out from books alone, although good results will be obtained, if one follows the directions given by the above writers.

In focusing an object accurately, one will find some difficulty, owing to the great difference in eyes. It is true that blue glass, or a solution of ammonia sulphate of copper, will greatly assist in getting a sharp chemical focus. The sharpness of this focus is what gives brilliancy and detail to the picture.

In my opinion it is incorrect focusing rather than jarring that gives a blurred picture. What else can it be when the image is caught in the small fraction of a second?

This is further illustrated by the individual who possesses an eye color-blind as to greens and reds. For such an eye the blue glass is of little assistance, as it sees the chemical focus unaided, and in this branch of science possesses great advantages over the normal eye, which sees the many variations of color.

For this work the color-blind eye has a great advantage over the normal eye, a fact I have not seen mentioned before.

There are many difficulties in photo-micrography yet unsolved, but good work can be done up to several hundred diameters, depending greatly on the specimen. The thinnest specimens, finely colored with alum cochineal, give admirable results. Thickness of specimen or diffuse coloring are fatal to clearness and brilliancy of detail.

Having obtained a good negative of any valuable microscopical specimen, it is a satisfaction to know that the picture from this negative can be reproduced, by various processes, and at a price within the reach of all.

Everything considered, the stippled electrotype plate, prepared from

¹ Woodward. — "American Journal of Science and Arts." Vol. 42, September, 1866. Report to Surg.-Gen. U.S.A., 1870-71.

² Sternberg. — "Photo-micrographs and how to make them." Published by Osgood & Co. 1883.

³ Walmsley. — "Anthony's Photographic Bulletin," December 25, 1886, January 8-22 and February 12, 1887.

⁴ Piersoll. — "Medical News," Philadelphia, June 19, 1886; "New York Medical Journal," June 26, 1886.

⁵ Y. May King. — "New York Medical Journal," July 2, 1887.

the negative for press-work, is probably the best. This is used in illustrating many of our best magazines. It would be an invaluable addition to our medical journals, and would have a far-reaching effect on the study and demonstration of pathological questions.

In studying microscopical objects it is impossible for several to examine the same object at the same time, unless the image is projected on a screen. Even then it is interesting to know that the image would be found out of focus for any one who happened to be color-blind; for the color-blind a different adjustment must be made.

All microscopists know that with high powers the slightest turn of the fine adjustment causes the image to present different lights and shades, or disappear entirely; consequently the hand is on the fine adjustment screw, and almost intuitively turns it to accommodate the eye to the different parts of the field. The same instrument is not used by all microscopists, consequently they do not all have the same illumination and the same amplification.

One may work with a large diaphragm, the other with a small; one with a condenser, the other without. These differences, and many others, occur, even when the same specimen is passed around for examination.

Should each person prepare his own specimens, a greater difference will occur. The method of preparing will not be the same, the cutting and staining will vary, and the mounting medium may not have the same refractive power.

Under all these varying conditions, how can we expect all to agree as to what they see, and more especially when the objects have to be magnified from 100 to 200 diameters before they are seen at all?

With these conditions, does any one wonder that varied opinions prevail, or that even the existence of some things is denied?

Under the existing circumstances it is impossible that it should be otherwise, and to settle the disputed points, without the aid of something more, is absolutely impossible. All this unrecorded microscopic study is lost to science.

Fortunately we have in photography a method of recording that is most accurate and valuable; for, no matter how careful one may be, his own drawings carry his own personal impressions, and when one attempts to record through an engraver, as we have before mentioned, he is no better off.

A good photo-micrograph is often more valuable than the original specimen, as it places the object before the observer in such a way that he can compare, measure, and make his own observations, and draw his own conclusions.

This is not possible with drawings.

Again, the photograph gives the picture with its lights and shadows. If these are not good in the specimen, one cannot improve them by photography. This, however, is not true with drawings. One can make a very good drawing from a very poor specimen, and, by so doing, give no idea of the value of the specimen. Not so with photography.

Photography reproduces the image so faithfully, that in this reproduction it criticises the preparation of the specimen itself, and thereby claims its own superiority; a claim most valid, and one, I think, all will concede.

To illustrate this difference of representation by photo-micrography and engraving, I refer to Figs. 1 and 13, *ANNALS OF GYNÆCOLOGY*, Oct., 1887, both being reproduced from the negatives by the same stippled electrotype process.

Fig. 1 is a copy of a wood-cut, photographed from a book illustration, with the characteristic diagrammatic appearance of the arteries and colunar epithelium.

Fig. 13 is a copy direct from the photo-micrographic negative, not so much enlarged, but representing the same pathological change.¹

RUPTURE OF THE PERINÆUM.—OBSERVATIONS FROM A STUDY OF SEVENTY-SIX CASES.

BY F. L. BURT, M.D.

A VERY large proportion of all the diseases of women which will require surgical interference will be found to be included under one or the other of two main divisions, viz.: Various morbid conditions chiefly associated with disorders of menstruation, occurring especially in the unmarried and childless; and those of laceration or rupture, with their sequelæ, resulting directly or indirectly from maternity. Under division first are included dysmenorrhœa of uterine origin; amenorrhœa from obstruction, flexions, stenosis, endometritis, etc., — a class of cases to which attention was called in the June number of the *ANNALS*, and for which the

¹ Since the above was written, Hydrochinone has appeared on the market as a developer, and unlike pyro does not stain everything it comes in contact with, while it develops equally as well as pyro or iron, a little slower perhaps, but much stronger, and does not blacken the fingers while holding the plate in the solution. It retains its developing power for a long time after being mixed, and used over and over again. I have used it with good results two months after first mixing. I have developed the bromide paper in the solution with good results, the picture coming out clear, and the paper remaining perfectly white.

operation of dilatation and curetting is advised. Under division second are included laceration of the cervix, rupture of the perinæum, all other abnormal complications of labor, and their usual consequences. It has been my purpose to deal with the cases coming into these two divisions under three distinct headings, classifying them according to the operation to be performed, thus making two classes form this second division.

Class one includes those conditions needing the operation of trachelorrhaphy, a description of which will be found in the July number of the *ANNALS*. Class two, the subject of this article, includes a list of seventy-six cases of rupture of the perinæum, for the cure of which some variety of the operation of perinæorrhaphy was performed. These cases were all treated in the Murdock Free Surgical Hospital for Women, and sixty-three of them were in the service of Dr. E. W. Cushing. The following tabular view represents the various associated conditions in these cases:—

Lacerated Cervix	56	Abdominal Abscess	1
Endometritis	39	Abscess of Gland of Bartholini . .	1
Caruncle of Urethra	2	Prolapse and Procidentia	9
Fistula in Ano	1	Fracture of Coccyx	2
Polypus	2	Cystocele	18
Subinvolution	5	Rectocele	15
Erosion of Os	5		

I have introduced this table of complications because by it I wish to present all the pathological states, since in this case two or more operations are required for one patient. These conditions are important in deciding what to do, what method of operation to employ, and whether to operate singly or perform the whole at one sitting. For an enumeration of symptoms we can refer to those described with the series of cases of lacerated cervix, since they are essentially the same, from the fact of the so frequent association of the two diseases, and we wish, in fact, to see to which one the symptoms really do belong.

Also, the course of events through years following the accident can just as well be recorded by the cases cited in that instance. Concerning the causes of these ruptures all are doubtless very familiar. They are due to the passage of the shoulders or head of the child, or to instruments, or to the hands, in case operative interference is required.

Some physicians claim never to have had a case in which rupture was a consequence, and they feel equally certain that it never should happen in any case. This is a great mistake, and entirely contrary to fact. It doubtless is true that many cases now ruptured should not have been, but

for all to escape is an impossibility. The expert will be successful in most cases, but at times, no matter how good the attendant, rupture is unavoidable. Inequality of size of child to passage, and absence of sufficient elasticity of the tissues, especially, may be fruitful of bad results which cannot be avoided. Precipitate labor, instrumental or otherwise, is often disastrous. Suppose now a case of rupture has just occurred, the question of the time and way to repair it doubtless comes to mind; but we understand at the same time that many cases escape unnoticed, are left to nature to heal, and that even bad cases may so occur and unite naturally, escaping the notice or knowledge of either patient or physician. In case the rupture is slight the parts fall into apposition, plastic material is thrown out, and the healing process goes on very satisfactorily, if only it is not tampered with. A better final result could be insured, however, if only the torn edges were approximated and held by interrupted sutures. In case the rupture is extensive or complete, no superficial suturing should be considered for a moment. It is rather harmful than otherwise. Numerous examples of this kind of repair come under observation, it being merely a bringing together of the external skin, with no attempt to unite the mucous membrane, form a perinæal body, or repair the bowel. Such a method is never satisfactory, whether done on a fresh case or in later life. All lacerations, however extensive, should be restored at the same time. For present purposes it will be well to speak of rupture according to its degree, as follows:—

1. Slight, — in which the skin and part of the body are involved.
2. Extensive, — in which the whole body is destroyed.
3. Complete, — in which sphincter ani or rectum are included.

The first does not always need repair, but the second and third should always be sutured at the time of the occurrence, unless for some serious reason it should seem wise to delay. Let us consider that such was not done, and that at any time later the patient presents herself to the surgeon for the relief of numerous symptoms of which she complains.

A careful investigation of the history has probably led to the inference that the pelvic organs are the cause of the trouble. The patient is best examined as follows: The position of all organs should be made out, both while the patient is standing and while lying on the back. This will give us the variation from the change of attitude. A thorough examination and diagnosis are to be made in every case for any disease that may be present, and all of this will be considered in its own place; but here we are concerned with ruptured perinæum, and those conditions associated which need operation at the same time.

The fingers are placed in the vagina to ascertain the size and shape,

and as to how much relaxed the tissues are found. The examiner must look for the old scars in the entrance of the vagina, and also find the little teat-like projections on the sides from which the rupture started. On drawing these points together there is seen the original condition to which the parts should be restored. The patient is asked to strain, to find how much projects from the vagina. Lastly, with the fore-finger in the rectum, most satisfactory knowledge is obtained as to the amount of tissue present, and the extent of the vaginal pouch or rectocele. Not all physicians will agree as to what to call a rupture. This refers only to the slight ones, — the first variety; as concerning the other two there can be no doubt.

In case this slight tear is found, the repair of it is advisable, provided the woman is suffering greatly, and her symptoms are referable to that as a cause; also, if a more extensive support is necessary for the organs above, — in some cases almost closing the vagina. Even when rupture exists, in case the symptoms referable to this as a cause are not discovered, and some other sufficient cause is found for any sufferings present, it will not be at all wise to recommend an operation in every case. Young women, those who expect to have more children, are frequently to be advised against restoration of the perinæum when the rupture is of a minor degree.

It seems to be generally considered that the future of a case after a rupture has taken place is something as follows: The uterus is supposed to rest upon the perinæum for its support, and, consequently, when the latter has been destroyed, that organ naturally falls and takes on a state of prolapse, and is associated with such conditions as cystocele, rectocele, and the like. This, however, is probably an erroneous view. If this were so, we would find, in case of most if not all women who have had many children, that the uterus would be sagging constantly; the cervix would bend upon itself, and would be seen projecting from the vagina. In other words, the perinæum, as a support, is not of sufficient strength to keep the uterus from becoming prolapsed. The uterus is held by its ligaments and surrounding tissues, the bladder having more to do with its support than the perinæum. Should these tissues give way from any cause the uterus descends.

The real cause of the descent appears to be as follows: Many of these women are very much constipated, and, as a consequence, there is an extreme degree of straining at stool. If the perinæum is entire any such pressure acts so high up, — acting on the thinner portions of the recto-vaginal septum, as to spend its force on the bladder and tissues above without much tendency to push directly outwards. If this septum be-

comes very thin as far as the sphincter, from rupture, then the pressure from the fæces, acting through a long period of time, bulges the septum, and forms a pouch at a point so far external that there is no support from above. This has a tendency to become larger constantly, and unless the septum stretches accordingly, there will be a corresponding dragging on the organs above. This downward pulling results in the prolapse of the uterus, its appendages, and the bladder. In this connection I wish to call attention to a point well worthy of consideration, and which I have not seen noted. It is a well-known fact that the vagina, like the rectum, has a sphincter-muscle, and that this, in the virgin, has a considerable power of contraction. This power is partly or wholly lost after child-bearing, if ruptured, and is diminished more or less by too free sexual indulgence, or by extensive stretching if much local treatment is required. When this state of affairs is present it will be readily seen that the natural power of healthy contraction has been lost, not alone because of the relaxation or rupture of the perinæum, but also by the loss of the power of the sphincter vaginæ muscle to contract laterally. This allows the labia and external vaginal sides to fall apart or to be very easily separated. Thus the rectal pouch and the bladder descend much more readily than would otherwise be the case. This general muscular relaxation may be found to have more influence in such cases than any one has been led to suppose. Now, by treatment, this course of events can be exactly reversed. If the uterus is replaced, held in position, its ligaments strengthened, and their pristine condition renewed, the cystic and rectal walls replaced, and perhaps contracted by astringents, the bowels kept open to avoid straining, a condition would then be acquired which some would consider a cure. This method is never to be preferred, however, except in cases in which operative measures are contra-indicated, or in the cases of the well-to-do who object to surgery.

The cure of this kind of a case is accomplished by the performance of Alexander's operation, anterior colporrhaphy or perinæorrhaphy, or a combination of two of them.

The results of Alexander's operation in these cases have not been particularly satisfactory in this hospital, and it seems rather more natural to go to the source and perform perinæorrhaphy after having well replaced the uterus. In point of fact the uterus usually stays well, and so far as these cases show the results have been quite satisfactory.

Therefore if the patient has a uterus nearly normal in size, which is prolapsed because of being dragged downward, replacement and the performance of perinæorrhaphy is indicated. The uterus can be supported later, if necessary, just as is the usual custom. Patients are

prepared as for the other operations, and the vulva is shared both as a convenience in operating and for cleanliness in the after treatment.

Frequent sublimate douches are given; the parts kept as clean and dry as possible, and the healing, if by first intention, is usually complete in from ten to fifteen days. The average time for removal of sutures, if any, is about two weeks. The bowels can be kept open from the beginning, or can be closed for two weeks, and then the contents softened and removed by enemata. The former is usually the most satisfactory method, especially if the sphincter is involved. A catheter kept in the bladder for a few days has worked very well in the cases where used. The average stay in hospital after operation has been about three weeks.

Before proceeding to this operation, a few complications, as seen in the table, may be noted. If a polyp is present, which needs no after treatment following the operation, this can be removed at the same time. Endometritis and subinvolution call for a curetting only, which can also be performed at the same sitting. A lacerated cervix or eroded os can likewise be treated at the same time. In case animal ligatures are used on the cervix, the part will not need to be touched again if it heals satisfactorily. With silk ligatures, they can be left till the perinæum can be spread sufficiently for their removal. The special contra-indication to the double operation will be adhesions of the uterus, and in fact any disease which will need further treatment that will be interfered with by a closed perinæum. Anterior colporrhaphy for cystocele can be performed at the same sitting in all cases, but it will frequently be found unnecessary when a perinæum is formed with drawing together of the pelvic fascia. In some cases in which there is rupture with prolapse, in which the Alexander operation is recommended by some authorities, a perinæorrhaphy will answer the full purpose. Especially notable is one case in this table which was completely cured by perinæorrhaphy after Alexander's operation had been performed and failed. In one case there was an extensive abdominal abscess, which was cured by vaginal incision and drainage, and afterward the restoration of the perinæum was performed, a very pleasing result in all respects. Three other cases of abdominal abscess have been perfectly cured; but the associated ruptures have not yet come to operation, and are not included in this list. Another has not as yet been operated, because of the presence of a very troublesome vesico-cervical fistula, which now has been cured by operation after much patient labor. Still another case, sent in for cervix and perinæum operation, had extreme pain and sensitiveness, for which a mass in the right side was found to be a cause. This proved to be a pus-tube, and it has been removed by laparotomy; yet so recently that it is not yet time for the plastic operation. It

has been my intention in this review to go into the description of this operation somewhat in detail, but I will consider a few points only and refer the reader to the description by Dr. Cushing as found in the "Journal of the American Medical Association," Oct. 22, 1887, and in this number of the ANNALS.

In every operation on the perinæum there must be a process of denuding, and the names of various surgeons are given to it according to the different figures which they make or the extent of their denudation.

There are two methods essentially. One simply refreshes the surface, the outer layer being removed and lost. The second raises a flap after a subcutaneous dissection.

The flap is preserved to a greater or less extent according to the fancy of the operator. It has been considered a more antiseptic method, can be performed more rapidly, and saves considerable tissue which some think it a disadvantage to lose. In many cases where the first method is used, the refreshing process extends over so small a surface that it makes only a skin-flap operation, and does nothing by way of restoration of the perinæum proper, nor does it in any way correct the rectocele. It is needless to say that such an operation would frequently be of no benefit. Another method which is extensively illustrated in the books, is performed more than any other, and which I consider faulty, is this: A large surface is refreshed, in fact all that is necessary, and beneath the whole sutures of wire, silk, or silk-worm gut are passed. The ends of the sutures appear externally on either side. The object is to coapt broad surfaces from side to side, making a triangle with apex upwards. The point is not gained. One can readily see that when these sutures are tied, the usual power being used in drawing the knot, the surfaces really approximate in the opposite direction, and that the distance antero-posteriorly is very much shortened. What should be from an inch to an inch and a quarter from base to apex, will be a quarter or three-eighths of an inch. Thus it will be seen that only a shallow body is formed, and not the triangle which is desired. To obviate this the perinæal pins were invented and used. They proved successful and were very satisfactory in many instances, but even this was not the ideal method sought. Then came what is both the latest and best in the use of the buried animal suture. This is all subcutaneous. Beginning at the deepest point, the perinæal body is built up in layers or stories, each taking in so little depth of tissue that the surfaces are entirely approximated laterally. Deep sutures draw well together; the pelvic fasciæ containing the separated ends of the transversus perinæi muscle. Externally the skin and mucous membrane are sutured with cat-gut — continuous or interrupted — or with interrupted silk ligatures. Silk

is to be removed in about two weeks and the suture holes will close rapidly.

In case there is a complete rupture, the surfaces of the rectal mucous membrane are to be refreshed and the edges united with silk or catgut. It is to be continued till the sphincter muscle is included. Catgut can be used entirely, but a very good method is to make the lower line of very fine silk and overcast it with a fine gut ligature. Then the perineum can be restored as described above, just as if the sphincter were not involved.

The ligatures used for this operation, and all used in this hospital, are of catgut, prepared after my own method, which I will soon publish.

Finally, it is fitting to say a few words concerning the results of this kind of work, and I wish the reader not to be misinformed in regard to it. It would be very easy to make a glowing account of successful cases to the total exclusion of all unsuccessful ones, or to report cases as cured when what is meant is that they simply healed. Such implications at least savor too much of a boastful tendency.

Although in expert hands most cases are a complete success, yet there are some few which do not result thus perfectly satisfactory. It seems to me impossible to gather this number of cases without finding some one or more which will not result as favorably as we wish. When the bowel is involved the chances of success are lessened by this complication, as the presence of feces against a wounded surface is by no means antiseptic. There are several cases of complete rupture, and of these there were a few which did not unite by first intention. The operation was not at fault, but external influences prevented a good union. For these a second operation was done, and the records show them to have done well except in one case, in which there was a narrow fistulous tract not healed; but the prolapse for which she applied for relief was cured, and she gained control over defecation. Considering that she was sixty-five years of age, and had gained so much as to be entirely comfortable, she did not wish anything more done.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

[Continued from page 480.]

THE case is interesting in the first place from the character of the pregnancy, — tubo-interstitial; secondly, the early rupture, — but six weeks pregnant; thirdly, no evidence of collapse, which we would naturally look for in a case of internal hemorrhage; fourthly, the cause of the rupture, which I think was provoked by the abortifacients; and, again, that the case presented symptoms or signs of acute intestinal obstruction.

Dr. BALDY thought that the diagnosis in cases of extra-uterine pregnancy is a matter of extreme difficulty, and, as a rule, that it was impossible to make a positive diagnosis. Some time ago he had seen a case at the Philadelphia Dispensary which had just been examined by Dr. Price. He was asked to examine the case and make a diagnosis. The symptoms presented, he thought, every point to which attention has been called, as bearing upon the diagnosis of extra-uterine pregnancy. The menses had stopped for one or two periods, and the woman presented all the signs we should expect to find at about the second month of pregnancy, including morning sickness and milk in the breasts. There was vesical and rectal irritation. Examination by the vagina disclosed a small mass to the left of the uterus. She was having characteristic colicky pains, and had been passing from the vagina decidual débris, or at least what we mistook for such from her description. We both made a diagnosis in accordance with these facts, and several other gentlemen present concurred in this opinion. At the operation the case was found to be one of small ovarian cyst. He thought that we heard a great deal of cases in which the diagnosis had been made and verified, but not enough of such cases as this one, which go to show how easily one can be mistaken.

If the diagnosis is made, the question of treatment arises, and one of the burning questions of the day is whether extra-uterine pregnancy should be treated by electricity or by abdominal section, where the diagnosis is supposed to have been made before rupture had taken place. The majority of American surgeons, he was sorry to say, at present favored the treatment by electricity. Of course, after rupture had taken place there was but one treatment, that of abdominal section. The treatment by electricity presents some advantages. It will, undoubtedly, kill the fœtus, and it does away with the objection of the so-called mutilation of the woman, as it also does away with the worry and excitement of an operation. There are, however, disadvantages which cannot be overlooked. There are cases on record in which the fœtus has ulcerated its way out.

Dr. Mann¹ states that there are only two such cases on record, and that, as the number are so few, we need attach no great importance to them; but if these two cases are compared with the total number of cases of extra-uterine pregnancy treated in this way and reported within the last few years, the proportion is decidedly large. There have been four cases reported of rupture of a vessel, without rupture of the cyst. In one case, that of Dr. Janvrin's, the vessel ruptured some days after the fœtus had been killed by electricity, and the patient lost her life. Here again is a very positive danger, and one which we cannot ignore, as Dr. Mann seems to think. As far as I know there has never been a death which could be attributed to the knife. A number have died after the operation, but they have died in consequence of the rupture, and not from the operation. The fact that the fœtus has been killed does not make the tube pervious, but leaves the woman as sterile from that side as effectually as if it had been removed by the knife and ligature. Dr. Lusk has reported two cases, in one of which, after six years, there was a mass still remaining as large as a pigeon's egg, and in the other, after four years, the tumor is as large as a hazel-nut. This is the usual history of these cases. I am in favor of removing

¹ *Annals of Gynecology*, Feb., 1888.

any pathological growth whatever from any portion of the body at any time, if it can be done without risk to life. These masses which are allowed to remain are as likely to set up subsequent trouble as some of the tubal and ovarian troubles for which we operate every day. It seems to me that the gentlemen who accept the knife for the least dangerous, and refuse it for the more dangerous, trouble, are exceedingly inconsistent, to say the least. By operation, the cyst is removed, the fear of subsequent danger is done away with, and the risk of the continued growth of the placenta, however small that risk may be, is also avoided. By fooling with electricity we put ourselves very much in the position of the child playing with fire, and our fingers are in just as much danger of being burned.

Dr. H. A. KELLY said that it made a great difference whether we saw the case in its incipency, say at the end of the sixth to the eighth week, when we must be more or less puzzled, or in the third or fourth month, when there is a large tumor, or again in advanced stage, where the dangers and difficulties are of a different character. Each of these classes demands separate consideration and separate treatment. Dr. Baldy had referred to a case in which he said that all the signs of extra-uterine pregnancy were present. He would criticise the statement in two particulars. In the first place, the decidua should be seen by the physician. This is a characteristic symptom. If we depend upon the statements of patients we are apt to be deceived. In the second place, there is another characteristic sign, and that is the diminution of the size of the tumor while under observation, due to the absorption of amniotic fluid. This was observed in his own case.

Very serious trouble has followed faradaic fœticide in a large number of cases. Both of Dr. Allen's historical cases had serious inflammatory trouble for a long time afterwards becoming an invalid. In the discussion following my paper on the removal of an unruptured extra-uterine pregnant cyst, Dr. Harris brought to light the subsequent history of many cases in which grave trouble had followed faradaic fœticide.

Dr. O'HARA thought that the occurrence of symptoms indicating the presence of internal hæmorrhage would throw light upon the diagnosis. He had a case in which the patient had internal hæmorrhage, and the only thing to explain it was that the woman had passed her time for menstruation.

Dr. GOODELL asked how Dr. Deaver explained the presence of the nozzle of the syringe so high up in the bowel.

Dr. DEAVER said that in his case there had been no indications of internal hæmorrhage. The only thing which had attracted the patient's attention was the occurrence of pain, which had appeared four hours before his first visit. The only way in which he could account for the nozzle of the syringe being so high is that after it became detached it was forced upwards by the force of the stream of water. There could have been no suction on account of the obstruction of the bowels.

J. M. BALDY,
Secretary.

COHN.—THE PRIMARY AND FINAL RESULTS IN OPERATIONS FOR PROLAPSUS UTERI. — *Ztsch. f. Geb. u. Gyn.* *xiv.* 2.

THE author deduces the following conclusions:—

1. The continuous catgut suture gives the securest guaranty of primary union, in addition to relative ease and rapidity in the performance of the operations. The objections which have been made to catgut are not valid. The superficial union of the wound obtainable by this means gives a firm cicatrix which is favorable to a permanent result.

2. Colpo-perinæorrhaphy may be the means of permanently curing even extensive conditions of prolapse. Hegar's method answers fully the demands which may be made upon it. The reasons for failure, as regards complete healing, in nearly half of the author's cases are:—

a. A portion of the cases which are referred to *recurrence of the cause of operation* are not recurrences in the proper sense of the term, but simply cases in which healing did not take place.

b. A portion of the recurrences are attributable to incompleteness of the operation, only anterior colporrhaphy having been done.

c. The other recurrences are due to such factors as severe parturition, quick repetition of pregnancy, and particular anatomical conditions of the posterior vaginal wall. In order to obtain permanent results from operations of this character it is desirable:—

First. In conditions of prolapse to operate upon the posterior vaginal wall at the earliest possible moment.

Second. To narrow the vagina as much as possible throughout its entire extent, by the high operation of posterior colporrhaphy.

Third. To make as high a perinæum as possible, bringing forward the narrow introitus. The higher the perinæum the firmer the pelvic floor. The more the vagina is drawn forward the more favorable will be the chances of permanent recovery.

GUSSEROW.—EXPERIENCE WITH PYOSALPINX AND ITS OPERATIVE REMOVAL. — *Arch. f. Gyn.* *xxxii.* 2.

S. HAS performed laparotomy for pyosalpinx thirty-one times during the past three years, both tubes being removed in ten cases. He defines pyosalpinx as that form of disease of the Fallopian tube in which the latter, filled with pus, forms a sac which is closed by adhesion to neighboring structures. Clinically, purulent salpingitis is indistinguishable from pyosalpinx, however it may be differentiated anatomically. The point of greatest importance clinically, that is, to the patient, is whether the diseased tube is closed, and there has or has not been an accumulation

of the purulent secretion of its mucous membrane. Of the thirty-one operations, only one resulted fatally, and that one from septic peritonitis. The study of the cases teaches little as to the etiology of pyosalpinx. Perimetritis had existed for a longer or briefer period in all cases before the tumor in the pelvis was recognized, and it is believed that such a condition must always precede pyosalpinx. Gonorrhœa was frequently found to have been an antecedent to the perimetritis; but so also were miscarriage and parturition. In those cases in which infection by gonococci did not take place, there was probably, primarily, catarrh of the uterine mucous membrane which extended to the mucous membrane of the tube. Next, the contents of the tube probably found their way into the abdominal cavity, set up a localized peritonitis, and perimetritis followed. The passage of the tubal contents into the abdominal cavity was favored, in some cases at least, by traumatic influences, such as blows, falls, etc. It is important to notice that in almost every one of the author's cases the ovaries were implicated in the tubal disease, perhaps forming the most intimate relationship with the tubes, containing abscesses in some cases with the abscess cavity communicating with the purulent collection in the tube. The clinical phenomena of the disease are those of chronic perimetritis, with sensations of pain and pressure in the pelvis, the intensity of which may be governed by the seat or the size of the tubal sac. Those patients who can remain quiet, and rest, suffer far less than those who must attend to work or household cares. It follows from this, also, that the disease is much more common in the poorer than in the well-to-do classes. With the congestion of menstruation the pain is increased, it may be violent and colicky, and it may be accompanied by tympanites, vomiting, and fever. In none of the cases were there symptoms which could be considered absolutely distinctive of pyosalpinx. The danger of rupture of the tube, and its almost certainly fatal consequences, should inspire one with a feeling of the urgent need of all such cases for operative interference. The differential diagnosis of this condition from small subserous myomata is not always easy. The history of the case must furnish us with important particulars. Differentiation from small tumors of the ovaries or broad ligaments is also oftentimes a matter of no little difficulty. The removal of tubal sacs is usually difficult, for reasons which are perfectly obvious. The operation may usually be facilitated by allowing an assistant with one or two fingers in the vagina to press the uterus forward toward the abdominal wound as far as possible. By this means the tubes can be brought within reach, which would otherwise be impossible in some cases. G. favors the removal of the ovary in all cases with its tube, and in case the disease is limited to one side he would leave the other intact. The danger of ventral hernia is a real one, and the author thinks it may best be avoided by making the abdominal wound as small as possible.

REVIEWS.

PHYSICIANS' AND STUDENTS' READY REFERENCE SERIES. OBSTETRIC SYNOPSIS. By John S. Stewart, M.D., Demonstrator of Obstetrics, etc. Illustrated. 200 pp. F. A Davis, publisher, Philadelphia.

THIS little book, as its title implies, is one of the series well adapted for students preparing for examination, or physicians who, for any reason, desire an accurate synopsis of the present state of obstetrics. As the author states in his preface, it is, to a great extent, the result of accurate note-taking for a number of years of his lectures on obstetrics, and in the preparation of it the leading works on the subject have been consulted. The plates show clearly the development of the fœtus, the mechanism of labor, and the various instruments used. The theoretical teachings are in accordance with the most modern views, especially in regard to puerperal fever. In the appendix is given the obstetrical nomenclature adopted by the International Medical Congress. A full index completes the work.

A PRACTICAL TEXT-BOOK OF THE DISEASES OF WOMEN. By Arthur H. N. Lewers, M.D., London, M.R.C.P., Assistant Obstetric Physician to the London Hospital, etc. 400 pp. Svo. With illustrations. \$2.25. P. Blakiston, Son, & Co., Philadelphia.

THIS is an excellent *résumé* of the present state of gynæcology. It is abundantly illustrated by good cuts, mostly taken from such works as Thorneburne, Doran, Playfair, and many others. The mode of making an examination is given at length; each disease is described clearly, and, where necessary, plates are given to assist in making deferential diagnosis from the symptoms present. There is a full chapter on diseases of the Fallopian tube and the various pelvic inflammations. The modern treatment of fibroid tumors by Apostoli's method is also given, with plates of his instruments. The author does not recommend hysterectomy for fibroids, except after careful treatment by electricity, and in very exceptional cases. Among so much that is excellent we have to notice the strange omission, which can be hardly otherwise than accidental. Although laceration of the cervix is clearly described, and Schroeder's plates being given representing this condition, and also the true pathology of erosions, yet there is no hint that the laceration of the cervix, eversion of the cervical mucous membrane, is curable by operation. Has the author never heard of Emmet's operation? Has it never been performed by Playfair and others, with whose treatment the author seems so well acquainted? He recommends, for obstinate cases, that a stick of fused zinc-sulphate and alum be passed into the cervical canal and left there to melt, the upper part of the vagina being properly protected. "If this

treatment does not succeed the case had better be set down as incurable, and the patient recommended to be content to keep the discharge from being great by using hot douches containing some astringent, such as alum or tannic acid." If this were the last word of British gynecology we should commiserate the fate of the British matron, but we prefer to think that the omission was purely accidental, and will be rectified in a later edition. One other advice seems odd to us, and that is the direction of inserting a Hodge pessary with the small end first and uppermost. We say, with confidence, that this is not customary in this country. With these exceptions the book can be recommended, and certainly contains all that can be expected in a book of its size.

HOSPITAL REPORT.

MURDOCK FREE SURGICAL HOSPITAL FOR WOMEN. — SERVICE OF DR. E. W. CUSHING. — REPORTED BY F. L. BURT, M.D.

CASE I. — Mrs. X. was sent to the hospital May 25, 1888, by Dr. Fraser, of Weymouth. Her operation was on June 7, and her discharge July 29. Menses at 15. Has had nine children. Climacteric twenty-seven years ago, and she is now 70 years of age.

Examination showed that the prolapsed uterus, vagina, and bladder protruded in a mass the size of a child's head at birth. On the right side on the extruded vaginal wall was an ulcer suggesting epithelioma about the size of the palm. (See Fig. 1.)

She suffered less pain than was to be expected from it, and called herself perfectly well in other respects. Nevertheless she was hopelessly bedridden, and the ulcer continually grew larger and deeper in spite of the most judicious and persevering treatment by her physician. The object of the operation was to remove the ulcer and the subjacent tissue, and to replace the parts. The whole mass was encircled by an elastic ligature; under sublimate irrigation all the diseased tissue and a wide margin around it was then dissected away, including the hypertrophied cervix uteri and a large piece of the left vaginal wall corresponding to that removed on the right. The pouch of Douglas hung down as seen in the figure, as a fold of peritonæum containing intestines. It was not opened. Above, the bladder was carefully dissected out and pushed away. The ureter appeared in the wound, and was freed carefully for about two inches. It is seen in the plate, hooked over the finger of an assistant. Then the vessels were taken up, both separately, and by passing a strong ligature through the

vaginal wall around the mass of vessels in the broad ligament and out again through the vaginal wall on the other side of the wound; this was also done on the left side. The elastic ligature was then loosened and the pouch of peritonæum with the intestine, as well as the bladder and ureter, were tucked up into the pelvic cavity. The elastic band was now tightened again, and the operation continued without loss of blood. The vaginal tissues were sutured with interrupted silk and continuous fine catgut. The elastic ligature was then removed, and the whole mass was returned to its normal position and retained by an iodoform tampon. There was little shock and no febrile reaction until the eighth day, June 14th. Restless, weak, temp. 99.°5. A rather hard mass was discovered in the lower abdomen. This might be distended bladder or abscess, or possibly tumor before unnoticed. Symptoms hardly severe enough for abscess. Bad odor present. Vagina irrigated. Speculum introduced and a free discharge of foul pus followed. Much more was expressed, and the cavity of the abscess which had formed the tumor just mentioned was fully irrigated with $\frac{1}{2000}$ sublimate and phenyl solution. A few days later, after doing well, she had a sudden attack with chill; temp. 105°, and irrational. She appeared very ill. Irrigation and the removal of a slough improved her condition at once. No more trouble followed. She gained till her discharge, felt very well, and as the parts were held in place, probably by adhesions, the perinæum was not restored.

CASE II.—Mrs. X. entered the hospital June 7, 1888. Age, 31; one child, 5 years. Menses at 12. Regular at present. Menstrual pains sometimes. There is considerable vaginal discharge constantly. Complains of local uterine troubles, but in other respects she feels in good health. Diagnosis: Prolapse of hypertrophied lower lip (see Fig. 4), lacerated cervix, endometritis, and subinvolution. The uterine measurement was four and one-half inches in depth. The endometrium was curetted, which, besides curing its disease, tended to stimulate contractions.

The cervix was amputated, thus getting rid of the hypertrophied lips and the pendulous mass, and curing the laceration and preventing further prolapse by removing its cause. Operation was performed by the Martin method on June 12. Discharged July 1, well.

CASE III.—Mrs. Y., age, 40, entered hospital Feb. 6, 1888. She has had four children, followed by five or six miscarriages. She is taking opium, tobacco, etc., in large quantities. Withal she was in rather a loathsome condition. Examination was made and the following diagnosis: Hypertrophied cervix with large erosion and laceration, ruptured perinæum, prolapse with cystocele and rectocele. (See Figs. 5 and 6.)

The mass was replaced, and the vagina was tamponned with wool pre-

vious to operation. Opium and all stimulation was stopped entirely within three days, much to the satisfaction both of attendants and patient. Operation was performed Feb. 16, 1888.

A rubber ligature was placed around the cervix to prevent hemorrhage. Martin's operation was performed for amputation of the cervix, and silk ligatures were used. No blood was lost during operation, and only slight venous oozing afterward from the needle tracks. Sutures were removed February 28 in part; the rest three days later. There was perfect union of the parts, and a very happy result. Later, March 5, she underwent another operation, which was not performed at the first sitting, on account of the extent of the erosion, and magnitude of the cervix operation. A wide strip of the anterior vaginal wall was removed, and the parts approximated and united by catgut continuous suture, and by three silk sutures. The perinæum was also restored at the same time by the flap operation, with buried catgut sutures in layers. The result was perfectly satisfactory, and the patient was discharged March 31, cured.

CASE IV. — Vesico-cervical fistula. — Mrs. Z., age, 32, was sent here by Dr. McGregor, of Littleton, N.H. She has eight children; the first six were delivered easily, and the last two after difficult instrumental labors. With the last child, two years ago, the labor was very much prolonged, and also difficult. Laceration took place at this time. This was previous to the attendance of her present physician. She entered the hospital Dec. 16, 1887. Her condition was as follows: Considerably emaciated, rupture of perinæum through sphincter, cicatricial adhesions about cervix, which was deeply torn on each side, and through the anterior lip was vesical fistula passing into the vagina. The cervical tissue could be felt better than seen, owing to retraction. Bladder was small, and urine flowed away constantly. She was operated for the fistula five times, — Dec. 19, Feb. 9, March 1, March 27, and July 5, — each, except the last, being a failure; the sutures holding properly, and the urine passing naturally for from ten days to two weeks, when it would each time reopen. The parts were refreshed, the amount differing somewhat at different sittings, and the surfaces at different times were united with silk, silk-worm gut, wire, besides animal ligature. The last operation was performed July 5 similar to the others, except that silk was used soaked in a solution of iodoform and ether. (See Figs. 7 and 8.)

A permanent catheter was inserted in the urethra. Sutures were removed July 12, and then it looked as though it would again open; but at the time of her discharge, July 23, it was found perfectly united, and she had recovered. During her stay in the hospital she had gained thirty-five pounds. The perinæum is to be restored later.

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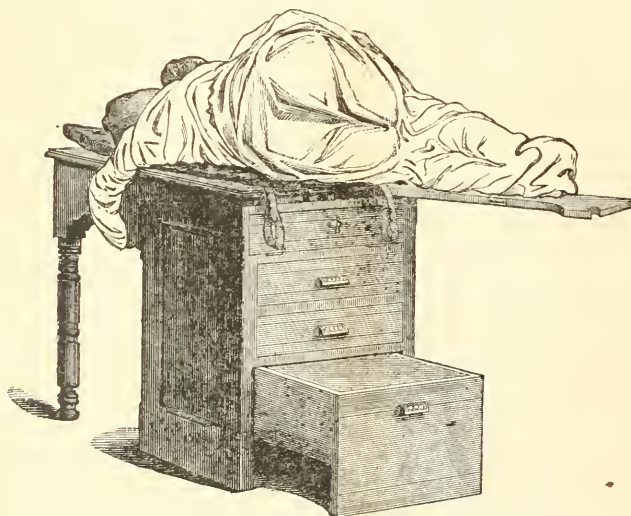
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OF

GYNÆCOLOGY

A MONTHLY REVIEW

GYNECOLOGY, OBSTETRICS, AND ABDOMINAL SURGERY.

EDITED BY
E. W. CUSHING, M.D.,

BOSTON.

WITH THE COLLABORATION OF

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SEPTEMBER, 1883.

CONTENTS.

NAME	PAGE	NAME	PAGE
THE TREATMENT OF PERITONITIS IN ABORTUS.		THE TREATMENT OF CASES OF APENDICITIS.	
By J. S. M. M.	101	By W. H.	101
SYMPTOMS OF VAGINAL HYPEREMIA.		THE TREATMENT OF OVARIAN TUMORS.	
By J. H.	101	By J. L.	101
CLINICAL DISCUSSION: TREATMENT OF HYPERTROPHIC UTERUS.		THE TREATMENT OF OVARIAN TUMORS.	
By P. G.	101	By J. L.	101
THE NON-OBSTETRICAL TREATMENT OF GYNECOLOGICAL CASES.		THE TREATMENT OF OVARIAN TUMORS.	
By H. R.	101	By J. L.	101
EDITORIAL.—Tubercular Salpingitis.		THE TREATMENT OF OVARIAN TUMORS.	
Editorial Paper on the Use of	101	By J. L.	101
THE ANNUAL SEASON.		THE TREATMENT OF OVARIAN TUMORS.	
By P. L.	101	By J. L.	101

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Fig. 1.

TUBERCULAR SALPINGITIS AND DERMOID CYST OF THE OVARY

Specimen presented by Prof. L. A. Reamy (see page 504). **A**—Contents of cyst, wax substance with hairs. **B**—Ovary showing cavity of cyst. **C** and **D**—Tubes showing gross tubercles.





Fig. 2

CHRONIC PERITONEAL EFFUSION

Caused by solid tumors of the ovaries, and by general involvement of the peritoneum within the
ovulate papillomata (see pages 564 and 565)

Published by permission of the patient





Fig. 3.

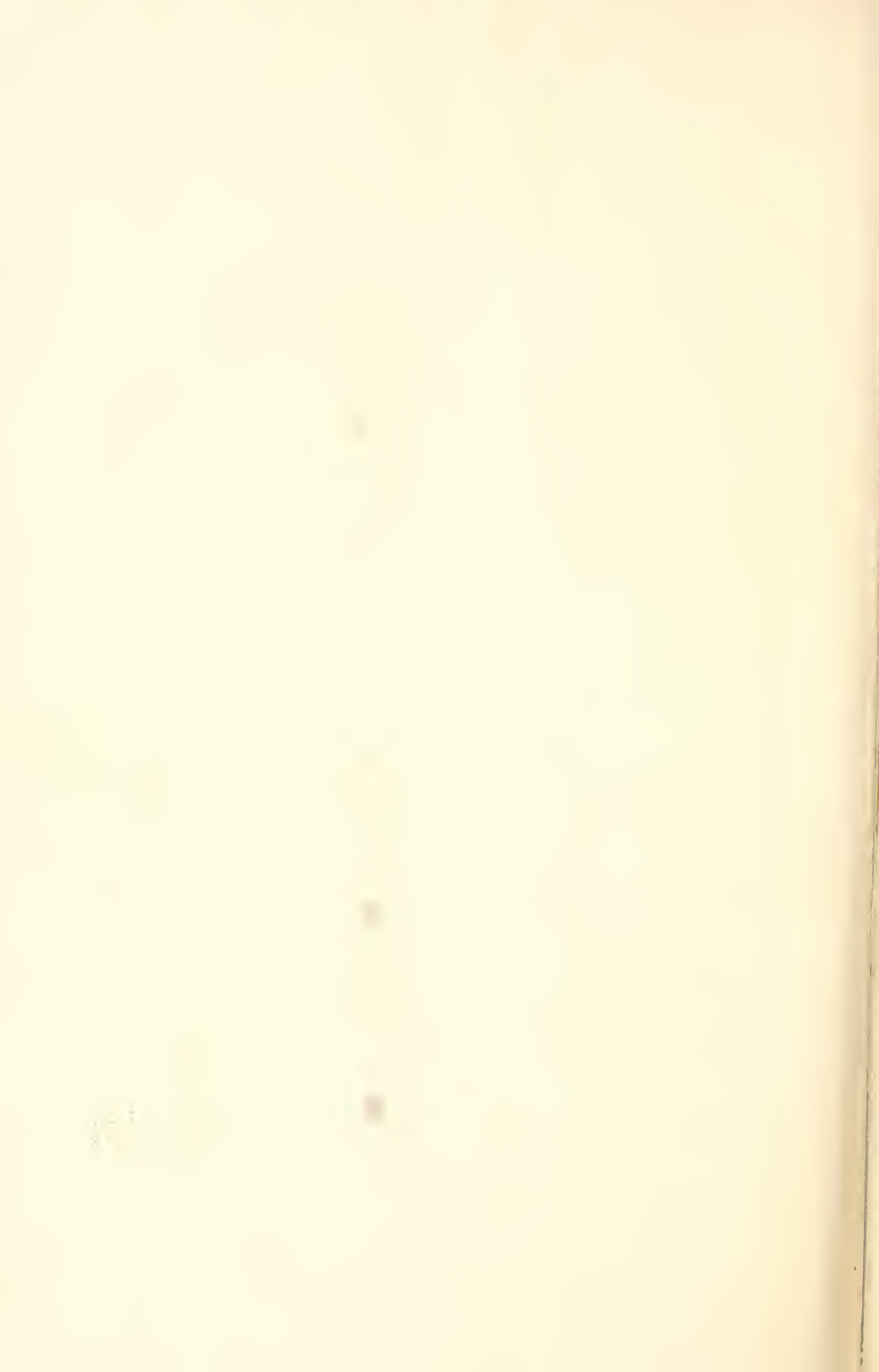
Tumor removed from case represented in Fig. 2. A—From right ovary. B—From left ovary, cut open.





Fig. 4.

Same case. Outer side of **B** in Fig. 4. **A** and **B**—Cystic cavity with granular paraffin-like, similar smaller cavities are scattered throughout the tissue, which is mostly *solidus*.



ANNALS

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NO. 12.

ORIGINAL COMMUNICATIONS.

THE TREATMENT OF PERITONITIS BY ABDOMINAL SECTION.—SOME ILLUSTRATIVE CASES.¹

BY L. S. McMURTRY, A.M., M.D., OF DANVILLE, KY.,

Formerly Professor of Anatomy in the Kentucky School of Medicine; Corresponding Member of the Obstetrical Society of Philadelphia, etc.

THE subject of this paper will be best presented by relating in detail some illustrative cases:—

On September 14, 1887, I saw, in consultation with my friend, Dr. D. C. Tucker, of Danville, a lady from Spencer county, Ky., with the following history: Mrs. A., aged 60 years, mother of six children, a woman of vigorous constitution, active habits, and uniformly good health until the beginning of present illness during the past year. Five months before she observed an enlargement of the abdomen, which gradually increased, growing quite rapidly of late. The history, the *facies*, the symptoms, the physical signs, were all those of ovarian tumor. The uterus was retroverted, but otherwise normal. The abdominal tumor could be distinctly outlined, and fluctuation was unquestionable. Dr. Dunlap saw the case with Dr. Tucker and myself, and joined us in a thorough examination. We concurred in the diagnosis of ovarian tumor, and so announced the result of our examination, with the reservation, however, that the exact nature of intra-abdominal disease could not be positively determined without exploratory incision. Fortunately the husband of this lady is a physician, and he fully appreciated the difficulties surrounding positive diagnosis in such cases. On September 29, 1887, Drs. Tucker,

¹ Read before the Kentucky State Medical Society, July 12, 1888.

Dunlap, and George Cowan, of Danville, and Dr. Schoolfield, of Covington, being present, I opened the abdomen, when the case was demonstrated to be one of encysted dropsy, the result of tubercular peritonitis. The peritoneum was thickened and injected, and its entire surface, both parietal and visceral, studded with myriads of tubercles, varying from the size of a millet-seed to that of a buck-shot. The viscera were matted together by universal adhesions. Separating these with my fingers I worked my way into an encysted accumulation of serous fluid. Two large accumulations, confined by adhesions as in a cyst, were evacuated in this way. The uterus and adnexa were quite normal in size and structure, but were welded together in an inseparable mass of adhesions. After separating adhesions, irrigating the peritoneum, and cleansing it as thoroughly as possible, the wound was closed.

The patient made an uninterrupted recovery. No preparation of opium or other anodyne was indicated after the operation, and none was administered; the catheter was not required, and was not used; the highest temperature noted was 99° F., and the pulse, which, for some time prior to the operation, ranged from 115 to 130, fell below 100 by the third day after the operation, and remained there. On the fourth day of convalescence her appetite was keen and she took food with relish; for weeks before she had suffered with nausea and vomiting. On the seventh day the sutures were removed from a dry and firmly united wound, and on the tenth day she sat up in the rocking-chair. At the end of three weeks she returned to her home in Spencer county. Her good health since and present satisfactory condition are attested by the following note from her daughter, received a few days since:—

DEAR DR. MCMURTRY:—In reply to your inquiry in regard to my mother, upon whom you operated almost a year ago, I am glad to say that there has been no return of the disease. She began to improve at once after the operation, and, though past sixty years of age, she is active in her habit, rides about the neighborhood, and has no symptoms of her former trouble.

Very respectfully,

EMMA T. SCHOOLFIELD.

JULY 9, 1888.

If this case were an isolated and exceptional one, it would be worthy of record only as a clinical curiosity; but in the progress of abdominal surgery, laparotomy has come to be applied as a deliberate and promising method of treatment in cases of tubercular peritonitis. Of many cases now on record I will only allude in detail to one or two. The case of Sir Spencer Wells has become an historic one. In his work on "Diseases of the Ovaries," which was published in 1865, Mr. Wells records a case

of tubercular peritonitis, in which recovery followed an exploratory laparotomy, removal of effusion, and cleansing the peritoneum. Reverting to this case in his book issued in 1885, he says: "That patient is still quite well, twenty-three (23) years after the operation, although the whole of the peritoneum was seen to be studded with myriads of tubercles, and the colon and omentum with coils of small intestine were bound down and nodulated by tubercle."¹

Another case worthy of special mention is reported by Dr. Ely Van de Warker, of Syracuse, New York, in the course of an instructive article on the subject in the "American Journal of Obstetrics" for September, 1887. Describing the pathological condition disclosed by the operation, Dr. Van de Warker says: "The peritoneum was rolled out and found to be studded with a great number of tubercles, from the size of a millet-seed to that of a buck-shot,—some of them white, others yellow. The intestines were everywhere beset with them. The transverse colon, thickened and covered with tubercles, was adherent to the peritoneum from side to side, thus enclosing the cavity and giving to the fluid the appearance of being confined within the walls of a cyst." The operation was done on June 11, 1886, and writing of the case in June, 1887, one year afterward, he says: "Before the sutures were removed there was a great change in her appearance, her demand for food greatly increased, and color returned to her cheeks. In three weeks she gained about ten pounds of flesh. She went on gaining, and in three months was a strong, robust woman, and at this time (June, 1887) remains so." I will add that in this case, too, a conditional diagnosis of ovarian cyst was made. Mr. Greig Smith makes this unqualified statement, viz.: "In many cases *encysted dropsy of the peritoneum* cannot be diagnosed from ovarian cyst."²

At the Congress of German Surgeons last autumn, Kummel, of Hamburg, reported thirty cases of tubercular peritonitis treated by abdominal section, and other members present in discussing the report added six more cases, making thirty-six cases with thirty recoveries. In some of these cases the peritoneum was treated with tincture of iodine in hot water; some by a solution of bichloride of mercury, 1 to 5000; and others by dusting iodoform over the peritoneal surface. It seemed to be a matter of indifference how the peritoneum was treated so it was opened, evacuated, and cleansed. A number of cases are reported by American and British surgeons. Greig Smith, commenting upon the cure of tubercular peritonitis by abdominal section, says: "It must be

¹ The Diagnosis and Surgical Treatment of Abdominal Tumors, page 218.

² Abdominal Surgery, by J. Greig Smith, second edition, page 107.

conceded that this is an exceedingly surprising fact. . . . It may be, and has been, said of these results, that the disease in these cases was probably not tubercular at all; but more than one case has shown not only the true structure of miliary tubercle, but the tubercle bacillus itself was present." No explanation yet made of the results obtained in these cases is satisfactory.

I have recently done an exploratory operation in the case of a young woman which turned out to be a case of tubercular peritonitis. The patient was 26 years of age, in the care of Dr. R. W. Keene and Dr. J. D. Neet, of Versailles, Ky. The disease was quite acute, accompanied by high temperature alternating with sub-normal temperature. She suffered severely with abdominal pain, requiring constant exhibition of opium. She was cachectic and emaciated, and suffered with nausea, vomiting, and diarrhœa. On Thursday, June 14th, of the present summer, I made an exploratory abdominal section, and found the entire peritoneum filled with tubercles, and in an active state of inflammation. The intestines were matted together and covered with lymph. I irrigated the peritoneum as thoroughly as I could and put in a drainage-tube, which remained eight days. The patient was relieved of pain, nausea, and vomiting, and has been enabled to discard the use of opium altogether after the operation. Writing under date of July 7th, Dr. Keene informs me that she continues to improve, is bright and cheerful, and eating well, though she still has a slight elevation of temperature. The cachexia was so advanced in this case that we could not reasonably have expected more than a temporary arrest of the disease, yet the benefits derived from abdominal section, irrigation, and drainage are positive. The establishment of the diagnosis beyond question, and intelligent treatment based thereon, together with relief of pain and freedom from opium, with improved nutrition, are advantages of incalculable value, and give hope and comfort to a desperate, painful, and hopeless illness.

To show the supreme value of abdominal section and drainage in an altogether different character of peritoneal inflammation, I beg to report another case, which illustrates more than one important practical point in pelvic surgery:—

Mrs. J. M. B., aged 40 years, a very corpulent woman, has never borne a child to full term. Nineteen years ago she had a miscarriage, and had never been well from the time of that event. Previous to that time she enjoyed perfect health. I first saw this lady three years ago in consultation with Dr. J. F. Purdom, of Mitchellsburg, Ky., when, with Dr. William Polk, of Perryville, we made a pelvic examination. Though fleshy and apparently hearty, she was the most nervous of all the nervous

women I have ever seen. Her complaints were all directed to the pelvis and abdomen. She suffered with menorrhagia at times, with dysmenorrhœa at other periods, and pain always. An examination evidenced a displaced and immovable uterus and tender ovaries. The hot vaginal douche, local applications of iodine, and the glycerine tampon were used, without material permanent improvement. She removed to another part of the State soon after I first saw her, and remained for two years. She was all this time an invalid. The symptoms all the time pointed to disease of the ovaries, and general sub-acute pelvic inflammation.

During the summer of 1887 she consulted me again, and, after thorough examination, I advised removal of the uterine appendages. The profuse menorrhagia, with the severe abdominal pain, pointed unerringly to disease of these organs. She scarcely recovered from one menstruation sufficiently to be up a few days, when all the pain and nervous disturbance of another period would supervene. Ovulation was the focal point of all her troubles. Opium was a necessity during these quickly recurring periods. She declined the operation, and I did not see her again until called to her on the evening of Nov. 12, 1887. At this time she was very ill indeed. The belly was tender and tympanitic; the pulse was quick and the features pinched, and she was vomiting almost constantly. The application of antiphlogistic measures accomplished nothing, and on the 15th of November Drs. Purdom and Bogle (who had previously attended her) met me in consultation, and acceded to my proposal to open the abdomen and remove the uterine appendages. On the 17th the operation was performed. Drs. D. C. Tucker, Fayette Dunlap, J. F. Purdom, and J. C. Bogle being present. The abdominal walls were rendered very thick by the large deposit of adipose tissue. On opening the abdomen the evidences and results of long-continued peritonitis were conspicuous. The ovaries were cirrhotic, and with the tubes were buried in a mass of firm, old adhesions. To dig them out with my fingers from the floor of a large, deep pelvis, through an incision in the thick abdominal wall, was difficult and tedious. Separating the adhesions of the pelvic viscera in order to thoroughly explore and cleanse the pelvic cavity, a large blood-clot was found to occupy the retro-uterine space. This clot was black, soft, and offensive, and it was evident that the acute septic peritonitis, which had supervened, was caused by the hæmatocœle. The clot was removed and the peritoneum washed out with hot water. Before closing the abdomen I considered the necessity of putting in a drainage-tube. On account of the great depth of the abdomen, and the thorough cleansing made, it was decided to leave the lowest suture untied, so that a tube could be inserted if necessary. In the light of future events this proved to be an error.

The patient reacted promptly from the operation, and went into an easy convalescence. The pulse, which was 130 for several days prior to the operation, fell beneath 100 by the fourth day, and the temperature remained below 100°. The stitches were removed on the seventh day, and all her symptoms were favorable. Her greatest improvement was in her nervous symptoms, which were severe and beyond the control of the will prior to the operation. At the end of the second week of convalescence she began to do badly. Abdominal pain and tenderness reappeared; the temperature began to ascend, reaching, on December 6, 104° F., with tympanites, vomiting, quick, small pulse at 136, forming an array of symptoms described by a recent writer as "the furies of abdominal surgery."

On the following day, December 7, wanting one day of three weeks from the first operation, I again placed the patient on the table, and reopened the abdomen by an incision through the cicatrix. Drs. Tucker and Purdom were present. I separated the adhesions in every direction, irrigated the peritoneum with hot water, and put in a long glass drainage-tube, the end resting in Douglas' space. The drainage was free, the discharge consisting of bloody serum.¹ On the tenth day I removed the glass tube, replacing it with a rubber one. The tube remained in the abdomen just twenty-eight days.

For two weeks after this operation I administered a Seidlitz powder daily, which, by keeping a current going out by the *primæ viæ*, did much to supplement the drainage of the peritoneum. My patient made a complete recovery, and is now quite restored to good health. I desire to call attention particularly to the fact that her pelvic troubles dated from the miscarriage which occurred soon after her marriage, nineteen years ago; that she was an invalid from that time, and has never conceived since. This is due, I believe, to infection of the peritoneum through the tubes at that time, and pathological changes in the ovaries and tubes. It is to be noted also that her nervous troubles, consisting of hysterical convulsions and other phenomena, were arrested by removal of the ovaries and tubes. Above all, this case teaches the lesson that purulent peritonitis has but one treatment, viz., abdominal section, irrigation, and drainage; and that decisive and persevering action alone will succeed in severe cases. The indications for operation in these cases are exactly those of an abscess in other parts, only adding that delay is fatal. If we wish to succeed we must operate early. The results from abdominal section and drainage in purulent peritonitis have been so gratifying, that we have reason to

¹ This case furnished me my first opportunity to test the efficiency of Dr. Joseph Price's method of using a cotton rope in the tube, which, by capillarity, greatly facilitates drainage.

believe that if done early those terrible cases of puerperal peritonitis which so often occur in primiparae may be rescued, instead of being consigned to opium euthanasia. To open the abdomen and insert a tube carries but little risk, and the early cleansing of the peritoneum of septic material is the only resource worthy of confidence in such cases.

In the second edition of his treatise on "Abdominal Surgery," Mr. Greig Smith suggests that we should aim to maintain a moist state of the peritoneum after abdominal section in cases of suppurative peritonitis. Since perfect drainage is impossible as soon as the coils of intestine become adherent, Mr. Smith believes that the intestines should be kept floating for a few days in a warm antiseptic fluid. He uses for this purpose a warm boro-glyceride solution, of the strength of an ounce of material to a pint of hot water. This fluid has some of the hygroscopic qualities of glycerine, and therefore is particularly adapted to treating the inflamed surface by depletion and drainage. The fluid should be about 102° F., and should be slowly forced into the abdomen through the tube three or four times each day, and retained several hours by closing the end of the tube.

The same principle has been applied with equal, if not greater, efficiency by Dr. Charles B. Penrose, of Philadelphia. In an admirable paper entitled "Intestinal Obstruction in its Surgical Aspects," read before the Surgical Section of the American Medical Association at its recent meeting at Cincinnati, Dr. Penrose describes the method of continual irrigation of the peritoneum which he has adopted. He uses two or more drainage-tubes, or one reflux tube. In a case of intestinal obstruction and purulent peritonitis he placed two glass tubes in the pelvis, and had a large rubber tube from the epigastrium to the lower angle of the abdominal incision. For twenty-four hours after the operation the abdomen was flushed every two hours with warm distilled water. There were two large pus pockets in the pelvis; the sigmoid flexure was gangrenous, with a fistulous opening, and twelve inches of the ileum was in such a state that resection seemed indicated, but was not done for fear the patient would die on the table. Dr. Penrose attributes the patient's recovery in this instance to the continual irrigation of the peritoneum. The suggestion is a valuable one, and I doubt not that continual irrigation will materially improve the results of abdominal section in suppurative peritonitis.

TWO CASES OF VAGINAL HYSTERECTOMY.

BY J. H. ETHERIDGE, M.D., CHICAGO.

CASE I. — The patient, when eight months in her pregnancy, was standing at the front gate one evening in the hot sun in August last, and all she remembers is that suddenly she had queer feelings, and went into the house. The next thing she knew, friends came in and were looking at the great amount of blood under the bed. It seems that she had grown delirious, and, feeling something in the vaginal region, she thrust her thumb and finger into the vagina and caught hold of the cervix, and by main force tore out a piece as long as two fingers of my hand, leaving hanging in the vagina a piece of cervix. The next day the attending physician amputated the piece, and the woman went on to full term, and was regularly delivered. During the month of March last I saw her, and right in the angle from which was torn this piece was a mass of sprouting granulations that were subjected to a microscopic examination, and were pronounced cancer. The case was laid before the patient and immediate hysterectomy advised, which was agreed to. This case, which was my sixth, illustrated one of the unpleasant features of taking out the uterus through the vagina.

The patient was placed in the extreme lithotomy position, a vaginal retractor put in over the perineum and drawn down; large lock-vulsellum forceps were placed on the cervix, and the latter was drawn down as far as possible. Dividing the vagina from the cervix with the scissors was an easy matter, and then separation of the tissues all round from the cervix with the finger-nail was easily accomplished. Large snap-forceps were placed on the left broad ligament. I found I had not sufficiently freed the uterus from the rectum, and cut a little with the scissors, and did a thing I will never do again. I reduced the size of the right broad ligament sufficiently to be grasped with another forceps. The uterus was removed in eleven minutes, but I spent three-quarters of an hour trying to arrest hæmorrhage. It seemed as though every shred of divided tissue was bleeding.

After my first case of hysterectomy I had constructed a very large retractor, whose blade is five and a half inches long, two and a quarter inches wide, with a suitable handle placed at right angles. The retractor was introduced into the vagina, flat surface downwards, and the anterior wall of the rectum was perfectly exposed, and the bleeding artery was quickly found and seized. I had cut it off in freeing the rectal attachment to the uterus with the scissors. Forceps were placed upon this

vessel, which completed the arrest of the hæmorrhage, and the patient was put to bed after tucking in some iodoform gauze thoroughly around the forceps, which were left there. In addition to the two large lock-forceps, I had thirteen others in the wound, which were taken off in twenty-four hours. The larger ones were taken off in forty-eight hours. The patient had no bad symptoms, and left the hospital in three weeks and two days.

CASE II. — The patient, 42 years of age, a Scandinavian, had borne several children. The attending physician had curetted the inside of the uterus for hæmorrhage, and had succeeded in getting away quite a large piece of something, which he sent to the pathologist of the University of Michigan, who sent it back with the report that it was a rapidly growing carcinoma. The removal of the uterus was determined upon. This organ was small in size, and when exposed and drawn down with the vulsellum-forceps it was brought easily to the mouth of the vagina. The vaginal wall was separated and the uterus brought down and removed in eight minutes. Four forceps only were left in this case, the hæmorrhage being easily checked, presenting a marked contrast to the preceding case. The patient was taken out of the operating-room, completely dressed and ready for bed, in thirty-two minutes after the commencement of the operation. No attempt at celerity was made in prosecuting the operation. She had gotten along without a bad symptom. The forceps were taken off in forty-eight hours. There was no rise of temperature except in the afternoon, when it would go up to about 100°, and go back again in the morning, showing that there was no blood-poisoning going on. There was one peculiarity in this case. The operation was done at 10.30 o'clock Sunday morning. Orders were left to catheterize the patient every six hours; she was catheterized shortly after the operation, but no urine was drawn, and again at 6 o'clock, without result. Just before completing these operations it is my custom to inject a solution of milk and water into the bladder for the purpose of detecting any rupture of the bladder, and it revealed that the bladder was not ruptured. I knew, also, that I had not included the ureters in the forceps, because I kept too far away from them; therefore I felt that it must be suppression of urine, the trouble being in the kidneys. I saw the patient that night between 9 and 10 o'clock, and the nurse said the only thing she complained of was pain in the back, referred to the renal region. Poultices were ordered, and the next morning at 6 she was catheterized and a drachm and a half of urine only was obtained. A hypodermic injection of a half-grain of pilocarpine was then administered, and I catheterized her four and a half hours later and drew off fourteen ounces of urine. With the exception of that one apparent bad symptom, the patient has had an uninterrupted recovery.

UTERINE DISEASES TREATED BY HEAT AND COLD
OVER THE SPINAL CORD, AND SYMPATHETIC
GANGLIA.

BY DR. KINNEAR, BOSTON.

IN the preface to his "Functional Diseases of Women," Dr. John Chapman says: "It is probable that the more the diseases and functional derangement of animals having a nervous system are investigated, the more they will be found to originate primarily in altered conditions of that system."

The cases he reports in this work, he further says, "constitute a remarkable proof that the circulation of the blood in the womb is subject to the controlling influence of the sympathetic nervous system; that the so-called functional diseases of that viscus are, in reality, abnormal conditions of the nervous ganglia which control it; and that these diseases are most safely, most easily, and most effectually remedied by acting, not on the womb itself, not by medicines presumed directly to influence it, but by decreasing or increasing the quantity of blood in those nervous centres, by which its blood-vessels are governed."

In my former articles I have endeavored to prove, by illustrative cases, as well as by preliminary papers, that heat and cold applied over the spine and sympathetic ganglia enable us to contract blood-vessels in the case of heat over the sympathetics, to dilate them when cold is applied; in the regions supplied by the sympathetic ganglia, over which the applications are made, I have distinctly and rapidly, in hyperæmias, hæmorrhages, and inflammations, contracted the arterioles, and relieved the patient, by heat over the sympathetic masses supplying nerves to the arterial coats, on the affected region.

In several cases of menorrhagia heat over the dorso-lumbar region has quickly checked the excess of the flow.

In many patients afflicted in this way the severe and exhausting flow does not take place until the end of the second or the beginning of the third day; consequently, as it is not desirable for many reasons to do more than restore normal menstruation, the hot-water bag is not used until excessive loss of blood is to be prevented.

It is then filled with water from 115° to 120° Fahr., and constantly applied until the discharge lessens. It is now removed and reapplied if the effect of the first use is only temporary.

The bag must be refilled every hour with water of the above-men-

tioned temperature, if a good and efficient result is not achieved during the first hour.

In one patient suffering with a sudden and exhausting attack of metrorrhagia, the violence of the hæmorrhage was checked in a few minutes, and ceased almost entirely in an hour. Patients who are relieved in this way express themselves as delighted with the soothing effects experienced. The aching in the back is quickly allayed, the weary sensations vanish, and the sufferer falls into a refreshing sleep.

In a recent letter received from Dr. Chapman he concisely reports a case of cancer of the bladder, interesting in this connection. He says: "The late Dr. Mallez, eminent in France in connection with the pathology and treatment of genito-urinary diseases, had a case of cancer of the bladder, attended with the most troublesome and uncontrollable hæmorrhage; he had two doctors in consultation with him on the case. They were all puzzled what to do, and at length one of them, who knew me personally, suggested the question whether Dr. Chapman's system could be applied; but they knew nothing of that method, and, therefore, were ignorant whether cold or heat should be applied in the case before them. One of them was deputed to come and obtain instructions from me. I told them heat must be used, and how to use it; the result was, the hæmorrhage was rapidly arrested." In many cases of nasal hæmorrhage I have quickly checked the bleeding by heat over the cervico-dorsal region, and in one very serious case of a young girl it was stopped in less than three minutes.

There seems to me no doubt that hæmorrhage from any part of the body may be speedily overcome by heat over the sympathetic ganglia controlling the bleeding vessels, unless they are of large calibre. In those leg amputations where there is capillary hæmorrhage or oozing I have no doubt that heat used over the lumbar region on the corresponding side to the amputation will quickly cause its cessation.

In post-partum hæmorrhage I believe that heat on the lumbar sympathetic ganglia will contract the uterine vessels, but, if also placed across the spinal cord, will, by attracting a surplus of blood into the motor cells of the cord controlling the womb, induce strong contraction of the uterus by the stronger nervous currents issued to its muscular fibres by way of the motor nerves. Is it not natural to think that the contraction of blood-vessels in the womb, or elsewhere, will be less hurtful, as well as more agreeable, to the patient, if such effect may be performed by restoring the normal or physiological action of central nervous tissue controlling the arterial muscular coats, than by applying cold, heat, or astringents locally, or giving an internal remedy like ergot, which, in an exhausted patient, has a further depressing effect upon the whole organism?

There is another way in which post-partum hæmorrhage may be checked by the use of Dr. Chapman's system, and it is beautifully illustrated in a case related to me.

The hæmorrhage was of great severity; all the usual remedies had failed; the patient was pulseless at the wrist; the face deathly pale, and speedy dissolution was imminent. A Chapman dorso-lumbar ice-bag was filled with small cracked ice, and placed upon the cervico-dorsal region, with an *immediate* return of color to the lips and face, of consciousness, a restoration of the radial pulse-beat, and a cessation of the hæmorrhage.

The patient recovered. The rationale of treatment was to quickly induce anæmia in the sympathetic ganglia of the neck and upper dorsal region. By so doing the contracted blood-vessels in the upper body became relaxed, and the small amount of blood left to the patient at once circulated through the brain and upper body, relieving the tension upon the relaxed blood-vessels in the uterus, allowing them to contract, and thus checking the hæmorrhage.

I have treated successfully one case of tendency to abortion at the third month.

This patient, eighteen months previously, had miscarried at six months and a half, while suffering from rheumatism. Becoming pregnant again, everything progressed favorably until the third month, when she was attacked by labor pains and a sense of weight in the uterus. The abdomen above the womb was also quite hot. The pains were frequent, and the patient was very nervous and uneasy. A double-columned hot-water bag was applied over the dorso-lumbar region, and the patient put to bed. In fifteen minutes she expressed herself as more than comfortable. The bag was removed at the end of an hour and a half; it was renewed in four hours, and so continued for the following day. The second day the pains, heat, and weight had entirely disappeared, and the bag was used on the third day only twice. The patient was then allowed to rise, and had no further trouble through the whole period of gestation, taking plenty of quiet exercise, and enjoying life.

Phlegmasia Dolens. — I have treated one case of this terrible disease successfully, by heat used only over the left lumbar region, the left leg being affected. When first called to the case the leg was swelling very rapidly; it was exceedingly hot, very tender to pressure, and the patient was in intense pain. It was the sixteenth day after delivery. I was puzzled as to which application I should make over the lumbar region, and determined to try ice. In less than half an hour the pain became agonizing; so, removing the cold I applied hot water instead. In less than an hour the whole leg had become *cool*, and the agonizing pain was reduced

to a dull ache. The leg ceased swelling, and the patient fell asleep. Heat was used as above four hours per day for four days, one hour and a half at a time, and in two weeks the patient, though slightly lame, was walking about. The leg was bandaged twice daily, and during this fortnight steadily decreased in size until it arrived within half an inch of the circumference of the sound limb. This enlargement almost entirely disappeared during the year following. In milk fever, with rapid and painful enlargement of the mamma, heat between the shoulders gives ready and speedy relief. It should be used for half an hour at a time, four or five times a day, until permanent relief is afforded.

In two cases in which I have used the application, both patients expressed the sensation as "delightfully comforting." I have had no opportunity to test the application, but I believe with Dr. Chapman, that when there is a deficiency of milk, unless the mother be exceedingly feeble, cold over the dorsal region will dilate the blood-vessels in the mammary glands, and so increase their function.

In a case of typhlitis, and two others of general peritonitis, heat over the dorso-lumbar region lowered the temperature speedily, relieved the pain, and through its contraction of the dilated peritoneal blood-vessels caused a general distribution of blood through the whole peripheral circulation. In all of the patients treated the hands and feet, which had been cold in spite of the general high temperature, became speedily warm, and the pulse at the wrist, which had been thready and rapid, became full and less frequent. In one patient who had already been suffering for thirty-six hours great pain, with no apparent relief from large doses of morphia, the ease to the pain began in five minutes; and in fifteen minutes she fell asleep. Next morning the temperature was normal, and there was complete relief from pain. In endometritis, metritis, and perimetritis, if the hot-water bag of Dr. Chapman is used over the dorso-lumbar region, it seems probable that it will abort these attacks in the majority of cases, if applied before consolidation of the effusion takes place, and that it will prevent spreading of the inflammation, or the formation of an abscess, even then.

The best effects, of course, will result the earlier in the attack the remedy is used. In pneumonia, acute bronchitis, acute laryngitis in the adult, and in pleurisy I have speedily lowered the temperature and subdued the inflammation by heat over the dorsal and cervico-dorsal region. Thus the hot-water bag of Dr. Chapman, properly applied over sympathetic ganglia, will in many cases control, and in others check, the spread of inflammations. If bacteria be the cause of inflammations, how is it possible to destroy a poison, if that poison be in the blood, by simply contracting arterioles?

THE ICE-BAG IN UTERINE DISEASES.

In young women suffering from dysmenorrhœa, accompanied by great pain during the first day or through the whole period, a dorso-lumbar ice-bag worn for an hour twice a day during the first day, or three or four hours a day if there is a very scanty flow, continuing through the menstruation, will often give quick relief to the pain, and increase the amount to a normal discharge.

In the spring of 1882 I was called to Miss M., 18 years of age. The period was beginning, as usual, with great pain, both in the region of the uterus and also in the lumbar region of the spine, shooting upwards through the dorsal region. The patient was making a great outcry, the feet and hands were cold, and the face much flushed.

Instead of morphia, which I was requested to use hypodermically, a dorso-lumbar ice-bag was placed over the dorso-lumbar region. In a few minutes the cries ceased, and the face began to lose its flush. In about forty minutes the feet and hands were quite warm, while the patient expressed herself as "perfectly comfortable." She fell asleep, and after several hours' nap woke with a fair flow, and entirely free from pain. She suffered no more during this period.

In previous menstruations the pain had not spent its force for twelve or twenty-four hours.

In a number of cases suffering from dysmenorrhœa the dorso-lumbar ice-bag, used an hour or two per day between the periods, has entirely overcome the trouble.

I have treated successfully two cases of prolapsus uteri by cold over the dorso-lumbar region. In the first case, that of a woman of 28 years of age, the trouble was wholly relieved in three months. The patient had worn pessaries without benefit for two years, and had been under a variety of treatment for eight years previous to consulting me. She could not walk more than a half a mile without a falling of the womb to the labia, accompanied by intense bearing-down and dragging pain. Three weeks after treatment she walked nearly two miles without pain or effort, and at the end of three months could walk as far and as well as most women in health.

The ligaments of the womb were anæmic, the cold over the congested sympathetic ganglia expelled the excess of blood from the latter; less strong nervous currents were sped to the arteries supplying the muscular tissues in the ligaments; the vessels expanded; the muscular fibres were nourished, and recovered their natural strength, drawing the womb upward into normal position. By renewing normal circulation to the

weakened ligaments, they were restored to physiological action, and the uterus to its place.

Case No. 2 was aged 38 at the beginning of treatment. When first examined the womb was external to the labia, enlarged, of a yellow color, and as hard to the touch as cartilage. Hard hypertrophy. This patient was so anemic that only ice-water in a Chapman bag was used over the lumbar region. She was kept in bed during the first two weeks of treatment.

She gained steadily in health, and after three months began business for herself, and has worked steadily ever since, four years having elapsed. The prolapse occasionally takes place now, usually from lifting a weight, which, of course, she was warned not to do. At such times she comes to me and has it replaced. The womb falls now, I should judge, about an inch from its natural position. To the touch it feels quite normal and soft. A better circulation taking place in the uterus, as well as the ligaments, has also restored health to the former.

This patient had been unable to work for three years before coming to me, and had tried all the usual methods.

In the leucorrhœa of women of strong physique and full circulation when in health, or, in other words, in women with an inherited good constitution, more or less broken down, and suffering from great vaginal discharge, ice to the dorso-lumbar region gives speedy and, properly continued, permanent relief. I have now on hand a patient who for several years has been a martyr to this disease. She has been under my care for eight weeks, using the bag at first three hours per day, one hour at a time; after three weeks, two hours per day; and now once per day. She has been wholly free from discharge for four weeks.

Several other cases have been relieved in the same way.

In women of feeble physique and a poor quality of nervous tissue great care must be exercised in using Chapman's method, and patience is required both by the physician and patient before relief can be obtained. A feeble muscular system extends to the muscular coat of arteries also; and in leucorrhœa, in such subjects, the blood may be driven from the spinal arteries during the ice application, but no contractile effect be produced on them; simply a flabby condition, which at once allows the blood to return in the same amount to the nervous spinal cells, after the bag is removed; therefore, the same nervous currents are issued to the glands of the vaginal mucous membrane, and the discharge continues.

Also in the dysmenorrhœa of such women the dilating effect of the cold to the spine must be carefully watched, because when the weak uterine arteries dilate they are apt to do so so widely as to cause an

excessive congestion in the womb, complete cessation of the flow, sense of weight and heaviness, and in one patient I remember a rise of temperature of two degrees.

In the patient referred to, heat was applied over the dorso-lumbar region immediately, with relief to the weight and heaviness, a rapid fall in the temperature to normal, and renewal of the flow. Directly the flow commenced the heat was removed from the spine.

Just here is a point worth considering in reference to a condition frequently mistaken for septicæmia after childbirth. Such cases have a sudden rise of temperature to a high point with no retained placenta, or any known absorption of septic material from the uterus, vagina, or outside sources, with some slight abdominal tenderness, but no definite signs of peritonitis. The high temperature continuing, from 105° to 107° or more, the patient shows symptoms of failure; stimulants are resorted to, and every measure taken; yet the issue is fatal. In women without much reserve force, may it not be that the strain of pregnancy and the exhaustion of labor leave the muscular system, including the arterial, in an exceedingly relaxed condition? Indeed, we know it to be so, by the hæmorrhagic tendency shown in such cases after labor. This relaxation, shown by oozing of blood from that organ from slight relaxation of its walls, or immediately dangerous flowing from greater relaxation, would intimate that nervous currents of diminished strength were issued to the muscles of the womb. The arteries being also relaxed in the dilated womb muscle, and the rush of blood being to the lower body, then the peritoneal arteries also will partake of the dilatation, if the flow from the uterus be simply an oozing; the consequences, *a rise in temperature*, as in the case above mentioned of ordinary excessive congestion of the uterus alone at the menstrual time, a slightly tender abdomen, a dicrotic pulse in the upper extremities and temporal arteries, rapid action of the heart, a gradual sero-sanguineous exudation into the peritoneal cavity, and, no general distribution of the circulation taking place, death from exhaustion. I am inclined to believe that many cases of so-called septicæmia are simply due to such a condition as is here described.

In women of delicate and feeble muscular tissue, who tend to hæmorrhage after labor, I think that either mental excitement or depression, or either elevating the upper body suddenly during the first two weeks after childbirth, or any but the most careful moving of the patient, will tend to give rise to the class of symptoms indicating a case of septicæmia, without external signs of peritonitis, through the relaxation of blood-vessels described. If this be so, then heat over the dorso-lumbar sympathetic ganglia will, by increasing their function, contract the blood-vessels in

both the womb and peritoneum, causing the hæmorrhage to cease and the temperature to fall, and distributing the circulation equally through the body, and relieving all the septicæmic symptoms, or, in short language, "curing the attack." If there are symptoms of acute peritonitis, then the prompt use of heat over the dorso-lumbar region will usually put an end to the attack.

In all of those dreadful inflammations which constitute the most prominent feature of puerperal fever, I believe that Dr. Chapman's application of heat over the sympathetic ganglia controlling the blood-vessels in the region attacked will be ultimately acknowledged as the most efficient and rapidly-acting remedy to subdue and cut them short.

I do not believe, with Dr. Fordyce Barker, that puerperal fever "is a zymotic disease of unknown origin," and that "local lesions are secondary to changes in the blood" (Lusk, page 652), but I do believe that high temperature and rapid exhaustion may be often induced by a sudden relaxation of the muscular coats of abdominal arterioles extending to the peritoneal vessels; from an abnormally relaxed condition of uterine vessels after labor, as well as by local heat or cold injections of various kinds, retained, and decaying portions of placenta, or membranes, etc., acting as irritants upon the exposed ends of severed nerves in the placental site; such irritating effect, being reflected through the trophic nerve-centres of the spinal cord back upon the womb, peritoneum, etc., giving rise to a metritis or endometritis, or one of the numerous abdominal inflammations referred to.

I have simply referred to this subject from this point of view, but hope to write further upon puerperal fever and septicæmia, in a paper devoted to this subject alone.

Uterine hyperplasia I believe to be due to excessively strong nervous currents speeded from trophic spinal cells along the trophic nerves or "positive motor" of Chapman, to the parenchyma of the uterus, causing rapid formation of new tissue, and consequent enlargement of the organ. I have treated two cases, which I hope to publish later, by ice over the dorso-lumbar region, in which the hypertrophy rapidly disappeared, and the patients recovered.

Inflammations resulting from abdominal operations, either in the male or female, it would appear, might also be subdued by the action of heat upon the sympathetic ganglia in the dorso-lumbar region.

THE NON-SURGICAL TREATMENT OF GYNÆCOLOGICAL CASES.

HORATIO R. BIGELOW, M.D.

[*Paper No. 2.*]

For the pain of dysmenorrhœa, as well as for many of the anomalous aches of women, antipyrin has proven itself of the greatest value. I have never used it in the dose advised by Dr. Captain ("Bulletin Médical") of 30-90 grains internally, or 15-60 grains of hypodermic injection, but in smaller quantities I have derived the greatest benefit from it. I consider it one of the most valuable remedies known, in the treatment of the reflex neuroses of women. If the ovary ache, paint with iodine, or try pressure with hot sponges or the cold compress. If that does not help matters, use graduated metal pressure, or blister and sprinkle the raw surface with iodoform. It seems trivial to caution against undue pressure upon a cystic ovary. For uncomplicated ovaritis (and the diagnosis is a hard one), counter irritation by heat, by the cold compress, or by iodine, with antipyrin internally. Also make use of the special ovarian massage, which is equally useful in the first day's pain of the menstruating woman. Pachysalpingitis is sometimes happily treated by using massage, the galvanic current, and by meeting each constitutional symptom as soon as manifested. Indeed, in all forms of salpingitis, electricity is of the greatest value. Don't be mistaken in the diagnosis. Many cases are said to be tubal which are really peritoneal; the diagnosis being based upon subjective symptoms. Many of these are common to sub-acute peritonitis and salpingitis, and it is by no means an easy matter to make out a catarrhal salpingitis with certainty. Still, it can be done, by studying each feature of the case carefully. Counter irritations, or even blistering over the ovary with leeches, following the course of the tube, will sometimes result in measurable benefit to women with tubal disease.

In treating the local manifestation, the general constitutional condition of the patient should not be forgotten. The fundamental, the underlying principles of general medicine are the groundwork of successful conservatism. Even the smallest details must be carried out, for after all it is by regulating the function of every other viscus that we hope to influence the one that is rebellious.

Neurasthenia.—In advocating the rest treatment for nerve exhaustion, I would go much farther and urge its trial in very many of the diseases of women, before inaugurating any local treatment whatever. Woman, as a study, must be viewed subjectively and objec-

tively. Subjectively as to her mental processes; objectively as to her symptoms and environment. Almost beyond everything else as causative, I place mental conditions and social environment. Get rid of the morbid introspection; of the useless but ever-present ovary; of the constant thought of the morrow and its belongings; render the woman's surroundings congenial; and in a large majority of instances you will dissipate pains and the sleeplessness, and you will have your subject in a much better condition for local interference. It does not do one particle of good to ring the changes of patient conservative treatment if the woman's life is one "demnition grind," or if her mental processes are unhealthy. Into the details of this treatment I need not enter. They are familiar to most people in and out of the profession. Be careful in the diagnosis. Many of the anomalous aches and pains of run-down women simulate those of pelvic disease; and hysterical women can conjure up demons out of fertile imaginations that soon become living realities for them. In this way they may deceive the ablest medical man, *albeit* unconsciously to themselves; for, in such as these, psychic distortions make out of subjective conditions objective realities. Ten chances to one there may be pelvic disorder connected with the neurasthenia, not specially causative, but intercurrent. It would be marvellous were it not so. With each viscus working badly, with impoverished blood-supply, and a generally run-down condition, it would be physiologically impossible for the uterus or ovaries not to suffer with the rest of the economy.

The plain indication is to build up the system first, and then turn to local treatment. It will only aggravate matters to rest at the uterus, to paint it, to bleed it, to hot-water it, or to bolster it up, because the *woman* is not in sympathy with it. A nervous, sensitive woman is rendered doubly nervous by the shock of local interference. Win her confidence, bring the constitutional tone up to normal, and, if the pelvic symptoms have not also improved, you will have the woman in a much better state of mind to respond to any local measure that may be used. I wish to emphasize this point of patience, because I have fully tested its worth, and know its value. Of equal importance is it that the mind of the physician should be entirely liberal, untrammelled by preconceived ideas. He must believe and know that women may suffer elsewhere than in their pelves, and that the uterus, even if it be dislocated or inflamed, may have nothing whatever to do in originating the symptomatology of neurasthenia. But whenever it may be impossible to carry out the rest treatment in full, it is well to enforce its salient characteristics. A light, digestible diet, consisting largely of milk (as much as can be tolerated; by adding a little salt to each tumblerful it will be more easily

digested), and eggs, good beef tea, and chicken. Cold bathing, with vigorous rubbing afterward, electricity and massage, when possible, cheerful society, only enough housework to keep the mind free from morbid introspection, regular out-of-door exercise,—all of these should be encouraged. Medicines are not called for, unless especially indicated.

Disorders of Menstruation.—Amenorrhœa. Pale, thin, watery-eyed women don't menstruate regularly or sufficiently, by reason of a pathological blood-supply. Fat, pale, light-haired, and flabby women don't menstruate properly for the same reason,—a deficiency of the red corpuscles,—the oxygen-carriers of the blood. Both of these types need *iron*,—Blaud's pills, for example, until eight or ten per diem are taken. Later, iron in combination with arsenic. Chlorate of potash is also excellent in many cases, when properly watched. Sometimes the period runs over three and four weeks. Don't give ergot, or manganese, or permanganate of potash, or anything else to force the flow. What is the use? What ultimate purpose is subserved? The forcing treatment has results that are merely temporary. The tonic treatment, persisted in, will bring with it regularity and sufficiency of flow. Don't expect a thin, delicate woman to perform her functions in the same way as her strong, robust sister. Her normal point is entirely different from the normal point of the other. She can't afford the same amount of monthly loss. The *regularity* and not the *amount* is the main point. If there be an arrest of flow due to cold, exposure, or great nervous tension, then manganese, together with the various home remedies, are of service. If the amenorrhœa be due to rigid contractions of the os this is properly a nervous dysmenorrhœa,—use graduated dilators under strict antiseptic precautions, or better still a mild faradic current, one pole being over the lumbar region and the other in the cervical canal.

Not infrequently large, florid women with an abundant blood-supply complain of amenorrhœa. If there be no local mischief and no catarrh of the endometrium, free purgation is called for, together with vaginal tampons of boro-glyceride to keep up and excite pelvic circulation. In general it may be said that electricity over the uterus and ovaries is very valuable. The faradic current for weak, anæmic women, and the galvanic in fat, robust women, are usually made use of. But the physician must be governed by circumstances. Local galvanism is liable to increase any nervous tendencies, while central galvanization is very soothing and induces sleep. •

Dysmenorrhœa.—Antipyrin and opium for the pain. Is the dysmenorrhœa membranous? Does the patient pass visible pieces of membrane and complain of sharp, colicky pains, sometimes almost un-

bearable? Try the galvanic current first, directly and indirectly applied. Dilating and draining, as directed by Dr. Wylie, may also be tried; but I have little faith in the treatment. In all morbid conditions of the endometrium, glandular, fungoid, or a mixed form, even in cases of simple uterine catarrh, I am a strong advocate of the dull curette in careful hands, to be followed with an injection of iodine or the application of pure carbolic acid. Out of many hundreds of cases which I have seen handled in this way, I have never seen one bad result — while the relief is permanent and immediate. It should be done under full antiseptic precautions; the vagina being first irrigated with a bichloride, warm solution. Then the graduated dilators, which have been kept in antiseptic fluid, may be demanded, and, when the canal is sufficiently dilated, irrigate the uterine cavity with the same solution. Scrape the whole surface carefully and thoroughly, and then again irrigate the cavity. If iodine is to be injected, pass the syringe well in until it reaches the fundus, then draw it a little back, so that it will not be in the immediate region of the tube, then inject a drop or two, and await contractions. Finish the injection, withdraw the piston so as to take up any excess of iodine, and remove the syringe. Wylie objects to the graduated dilators, because the uterus wobbles about; but this organ is easily fixed with a tenaculum, and I find the dilators handy and useful. There is no way known to gynecology in which a pathological endometrium can be radically brought back to physiological conditions, equal to the scraping process. I have tried all manner of local application, and have seen them all tried over and over again by eminent men; but I never myself received any great satisfaction from such measures, and I question if my brethren have had any better luck. If the membrane is *diseased*, of what use is drainage and rapid dilatation? I mean, of what permanent use. Goodell's plan is first-rate when the os is rigid and unyielding, and by opening a canal for the exit of an irritating fluid we accomplish much; but we must go a step farther, and restore the membrane itself to normal. There is a needless timidity in the use of the curette, for there is no possible reason why it should succeed so beautifully in Germany, and be so frowned upon in America. Guided by intelligence and used under the fullest antiseptic precaution it ceases to be a thing of danger. So I hold these facts proven, so far as my knowledge of the subject goes: —

1. Quiet pain with antipyrin and opium.
2. Rectify dislocated uterus with cotton pessaries.
3. Restore a diseased endometrium by using the dull curette, following with an injection of iodine or an application of carbolic acid, as the case may be.

4. Nervous spasm of the os may be overcome by galvanism.

5. For rigid os use rapid dilatation.

6. Uteri that are bound down by adhesions and surrounded with the exudates of prior parametritis should not be curetted, and the sound should not be introduced. In these cases general treatment by massage, electricity, and above all by the Moor baths, for which Franzensbad is so widely celebrated, together with hot-water injections, and tampons of glycerine, boro-glyceride, and glycerine and alum, must be pushed perseveringly and with much patience.

7. Pessaries in the treatment of dysmenorrhœa are, generally speaking, an abomination.

8. Divulsion belongs to the surgeon, and its utility may be questioned.

9. The most general cause of dysmenorrhœa being a diseased endometrium, and this membrane being adenoid in nature and furnishing as it were from itself the periodic flux, the extirpation of the ovaries and tubes for the radical cure is a questionable proceeding, and, in the present lamentable condition of ignorance of everything connected with menstruation, does not seem to be warranted by the necessities of the case; certainly not until the endometrium has been properly treated.

10. To remove non-diseased ovaries and tubes for the cure of dysmenorrhœa is most irrational and illogical. For if the ovaries and tubes *are* necessary factors of menstruation, and if they themselves be healthy, it follows of course that the trouble must be elsewhere, either in the uterine mucous membrane or in the nervous system, in which case a surgical operation would be of no service, because menstruation often exists after it.

Menorrhagia. — What is it due to? Both menorrhagia and metrorrhagia are generally due to changes going on within the uterus. Constitutional causes must be met upon the principles of general medicine. In the excessive flow consequent upon inflammation of the ovaries or of the ovaries and tubes, it is better to do nothing, as the flux relieves the pain. If due to myoma, use electricity, ergot, and Cutter's system of diet.

Some very wonderful results have followed both the electrical and ergot plans of treatment. Until the action of Tait's operation is sufficiently well explained to bear logical investigation, its propriety in the treatment of myoma which endanger life by bleeding may be questioned. I have already questioned it. But Mr. Tait feels so often called upon to correct misquotations and misrepresentations, that I will not cross swords with him twice on the same subject. His lot is a hard one, and I tender the pipe of peace. Henceforth for me and my purposes Mr. Tait "does not open the abdomen to find out."

In degenerations of the endometrium there is nothing to do but curetting, the injection of iodine should follow, especially if the uterus be flabby. This use of the curette is especially valuable in cases where the glandular hyperplasia of the uterine mucosa has extended to the cervical canal, crowding it in such a way that the lips, becoming everted, roll out, disclosing the diseased process, which formerly deceived many men, and led them to call this a true ulceration. Here we scrape the whole tract and treat the local glandular erosion, just as the editor advises in the first number of this journal. Dr. Cushing has written one of the best articles we have on this subject, and I commend its good common sense to every one.

Ergot, in enlarged uterus, and cannabis indica, are valuable in combination. The former to contract the uterus and the latter to control the hæmorrhage.

The Menopause. — Hæmorrhages from fungoid degenerations of the endometrium should be met with the curette. But, if the physician fear this, let him try an injection of iodine, and, if he dread this, then try the swab and pure carbolic acid. The nervous symptoms and the "hot flashes" will all disappear after this plan has been fully inaugurated. Treat the prolapse, if it exist, with medicated tampons, and if the cervical m.m. be hyperæsthetic, dilate and touch it with carbolic acid. Some cases of excessive nervousness, even of mania, will recover speedily under dilatation of the cervix and an application to the endometrium. It is a period full of interest to the physician. — this cessation in women of the great function of their lives, — and one that demands close observation. The mind — the whole subjective life of the woman — must be closely watched. Her whole environment must be adjusted to a nicety to meet the especial indications. Plenty of fresh air; plenty of out-of-door life and congenial society; medicines to soothe pain; applications to arrest hæmorrhage as I have already stated; and a patient watching to meet emergencies as they may arise.

Many things which I wanted to write about must be left for the future, for I have already passed beyond the limits assigned me. There is much more to be said about dislocated uteri and pessaries, about pathological conditions of the cervix and of its membrane, than has yet been said, although what has been written upon these subjects alone would fill many volumes. I have endeavored in these two papers to present the practical resources of gynecology, and to picture the details in a homely way, without any attempt at ethical adornment. Have I made any rough places smooth? Let those be credited, and those only, who were masters when I was an apprentice, and who fashioned the tools with which we work to-day.

TUBERCULAR SALPINGITIS.

THE importance and gravity of this disease are so great, and the results of surgical interference are so surprising and so satisfactory, that we take pleasure in presenting to our readers the accompanying picture of a specimen which is almost unique. During the meeting of the American Medical Association at Cincinnati we were honored by Dr. T. A. Reamy with an invitation to be present at his private hospital to witness an operation on the patient from whom he removed this specimen (Fig. 1). The lady had suffered great pain in the pelvis for some years, and physical examination revealed the ovaries and tubes enlarged and very tender. There was no history or symptom of tuberculosis. The operation was performed with the skill and care for which Professor Reamy is well known, and presented no especial difficulties.

As seen in the photograph, there was in one ovary a dermoid cyst containing a butter-like substance and a few brown hairs; the other ovary was swollen and cystic. The chief interest, however, lay in the tubes, which were enlarged, occluded, and filled with a cheesy purulent mass, the peritoneal covering of the tubes was studded everywhere with miliary tubercles, as seen in the figure. There were no tubercles on the other peritoneal surfaces. The patient made a good recovery, and is much relieved. Dr. Reamy has kindly promised a report of the final result of the operation when a sufficient time has elapsed to show whether the recovery appears to be permanent.

SCATTERED PAPILLOMATA OF THE PERITONÆUM.

THE case represented by Figs. 2, 3, and 4, and reported on p. 590, is one of a class of much interest in regard to the prognosis to be pronounced when papillomata are found grafted on the various viscera and peritoneal surfaces. It is well known that in some cases of papilloma of the ovary or broad ligament, after rupture of the cyst from accident, absorption, or tapping, minute particles of epithelial tissue, floating in the peritoneal cavity like spawn or seed, attach themselves to the various peritoneal surfaces, and continue to grow there; when small, these look like miliary tubercles, but some of them grow much larger than the latter. Many cases are recorded where these have been found at operation, and probably in many more cases they have been found where no record of the fact has been published. Curiously, little is said in our text-books and other

medical literature as to the relative gravity of this complication ; and from conversation we find that the greatest difference of opinion exists among operators as to the prognosis in such cases.

It is agreed that patients recover from the immediate effects of the operation in spite of such miliary peritoneal papillomata ; but whether they are likely to live weeks, or months, or years is undecided. Moreover, the question of the malignancy of papillomata of the ovaries or broad ligament is in a very unsatisfactory condition. Practically, it is known that solid tumors are bad, and apt to be malignant, but the microscopical distinction is not yet made clear.

Without entering on this question here we have presented this case as a slight contribution to this subject, and we would request such of our readers as have had any such cases to communicate to us the results of the operation, if not yet reported, or to send us the references to such cases of their own, or of others, as have been published. Especially is it desirable to establish the probable course of such cases after operation, and to ascertain whether there is any chance that such scattered papillomata may wither away after the abdomen has been opened, or after establishment of permanent drainage.

THE ANIMAL SUTURE.—CONCERNING ITS PREPARATION AND USES.

BY F. L. BURT, M.D., BOSTON.

THE suture is a necessity in the practice of surgery universally recognized. All are agreed as to the use of some kind of suture ; but there is not the same unity of feeling in regard to the kind of material to be used ; again, differences of opinion prevail as to the proper or best method for the preparation of the same. It has been my fortune to use sutures of all varieties, many of which I could procure in the shops, prepared much as I desired them, and very satisfactory in their use, but in none of the various kinds and qualities of animal ligature, so obtained, which will be considered in this paper, could I acquire any confidence, and the results of its use were such as to frequently cause suppuration and prevent the healing by first intention, which was sought.

Communicating with different surgeons concerning their own use of sutures, and as to their success in obtaining such an article as they desire, the verdict has been invariably the same ; viz., no perfectly reliable preparation had been found, each kind being in some way defective. Some

stated that they had given up the use of animal ligatures in many instances, because of their inability to procure suitable material. It was very evident that what was required was a ligature, neatly prepared and preserved, perfectly aseptic, and always ready for use; suitable for general hospital use, and portable withal, so as to be of service for private practice.

Each firm dealing in surgeons' supplies has its own article prepared by themselves, or for them. Every kind which I have yet seen has proved to me to be quite unsatisfactory, and for the following reasons: The raw material used is mostly of poor quality, and not of uniform strength. Sufficiently strong at some points, it will be found very weak in others, and consequently would frequently break at a critical moment.

If made by any tanning process, all parts will not be found to be equally stained: the contents of different bottles will vary from a very light to a very dark color, without reference to size; whereas, all should be of the same color,—especially different portions of the same piece,—unless a part be varied a little by deeper staining, in order to resist absorption for a few days longer. The article may be found to be harsh and non-pliable, consequently difficult to tie, and if an artery is ligated with it, there is no certainty that it will not drop off, and be the cause of secondary hæmorrhage. The same has happened to ligated bleeding points in the abdominal cavity. Again, most preparations are preserved in carbolic oil, carbolic acid, and linseed oil, usually 1 to 5. In this the ligature becomes soaked, and in such a condition is imbedded in the tissues, or after a short soaking in some antiseptic solution, which generally does not remove much of the oil, it is considered ready for use. This strength of acid seems to me to be too great, and likely to be too irritating to the flesh. It takes considerable care to keep it as it should be, and the oil makes it very dirty to handle, and rather unsatisfactory to carry about. Finally, cases have been noted in which there were unfavorable results, which seemed to be directly traceable to the ligature as a cause.

Much of the material now in use is prepared after the formula of Professor Lister, large quantities of which are imported from Macfarlan & Co., of Edinburgh. Some of the text-books—the recent ones—have introduced a formula for the preparation of catgut, and I will quote the following from Wyeth's "Text-Book on Surgery:" "Macewen has introduced a chromic-acid catgut ligature, which resists absorption much longer than juniper or alcohol gut. His method is: Chromic acid, 1 part; water, 5 parts (by weight). To one part of this solution add twenty parts of glycerine, and allow the violin strings to remain immersed for seven or eight months. They are then preserved in carbolic acid, one

part, to glycerine, ten (1 to 10). Thus prepared, catgut will resist absorption from twenty to sixty days."

I have samples of gut prepared after this formula. As will be noticed, the proportion of chromic acid is as 1 to 125. Since this is a glycerine solution, it probably does not give up so much acid to the gut as would the same strength of a watery solution, but that there has been considerable tanning process is seen from the deep maroon color, and were it not that it has been in the glycerine it would be less pliable and much tougher than the strongest of sole leather. I have preparations also of some gut which has been through a watery solution of the same strength for one day, part of which is preserved in the carbolic glycerine and a part kept dry. Another quantity was made with the same strength of chromic acid in $\frac{1}{20}$ carbolic acid. This makes a very dark, muddy mixture, and the character of the gut is changed accordingly, whereas the solution in clear water is a brilliant red, and it produces the maroon-colored gut. It is very evident that the gut will be colored in proportion to the strength of the solution, and according as to whether it is in a watery or oily solution. It will also make a great deal of difference in regard to how much tendon there should be placed in a given quantity of chromic solution, 5ss of catgut placed in \mathfrak{z} iv of the strong solution takes its fill of chromic acid, yet does not change the color of the solution.

There are great objections to any material prepared with such formula. The acid (chromic) is a caustic, and in such quantity is certainly of too great strength for the tissues. The tendon will be too hard, not pliable, and will tie with difficulty, and usually will not hold a knot. Made, as it is, to resist absorption from three to eight weeks, our object will likely be defeated, since, wishing healing by first intention, which will take place within a week, if at all, we will expect non-union because of the presence of a non-absorbing material which will act as a foreign body. From one to three weeks is the longest time that it is desirable to have a tendon hold. If more strength is necessary, other materials, as silk, silk-worm gut, or wire, had better be used.

After trying in vain to procure satisfactory ready-made goods, I purchased a quantity of raw gut, and undertook the preparation of it, starting with the following formula, which I understand to be that of Professor Lister:—

R	Acidi Chromici	gr. ii.
	Acidi Carbolic	\mathfrak{z} vi, \mathfrak{D} i.
	Aque	\mathfrak{z} xvi, \mathfrak{z} vi.

In other words, this is a 1 to 1,000 solution of chromic acid in a 1 to 20 carbolic, the chromic acid being added to the other solution.

Ligatures are allowed to soak in this for forty-eight hours, after which they are removed and thoroughly dried; then placed in a 1 to 5 solution of carbolic acid in linseed-oil, in which they remain immersed till wanted for use.

I have used this formula, varying it by thousands, from 1 to 1,000 to 1 to 6,000 chromic acid. Those different proportions will produce very different grades of ligature, varying from one easily and quickly absorbable to one which will absorb with great difficulty and take too long a time. It being somewhat uncertain as to the exact strength of solution, unless great care is taken and with very sensitive scales, which may not be at hand. I finally gave up weighing entirely, and depended upon the sense of sight to determine the proper color of my solution. However others may wish to do this, it will be found that the most satisfactory strength is not more than 1 to 5,000 nor less than 1 to 6,000 chromic acid in a 1 to 20 aqueous solution of carbolic acid.

The ligature, when prepared, should represent the same shade as the original solution, and the common amber most nearly represents the color. In order to obtain this I found it necessary to watch the process, and that the forty-eight hours, or any other stated time, would not answer.

At the end of four to six hours it is usually sufficiently done. It had better be begun in the morning, since daylight is necessary to distinguish the yellow; and if the staining process has not gone far enough before dark, the solution had better be reduced somewhat in strength of chromic acid only, and then left overnight, or the ligatures can to advantage be removed and dried, and immersed the following day. When it has remained sufficiently long remove it and dry thoroughly.

In this condition it is placed in bottles, sealed, if desired, and is always ready for use, needing no preparation, except to be soaked in $\frac{1}{20}$ carbolic acid or $\frac{1}{1000}$ sublimate solution from the beginning of the operation till needed, or, say, one-half hour. The most satisfactory method is to immerse the gut in the weakest solution, curing it slowly and evenly and gradually, adding strength of chromic acid, if necessary.

To whoever wishes to make his own preparation I would suggest that one or more trials be made with single small pieces till sufficient experience is acquired, and then it could be prepared in quantities suitable for months or years of work.

Any tendon can be prepared in this manner. The different kinds are the following: Kangaroo, moose, whale, deer, fox, squirrel, catgut. The squirrel is a choice tendon, and can be split into very fine pieces without fraying, but is too short for general use. The whale or moose answers very well sometimes; and I have seen very fine results after their

use, but their fibres are arranged diagonally, and consequently cannot be split up into long fine strips. The kangaroo tendon makes a fine ligature, and would be frequently used if it could be obtained in large quantity and without difficulty.

Catgut, on the other hand, is cheap, always at hand, and very satisfactory, consequently I have prepared it, and used it almost altogether.

A kind sold by dealers in clock materials, put up in coils from fourteen to sixteen feet in length, I have found very nice. It has worked just as well as the violin string, and the cost is very much less.

The retail price is seventy-five cents to one dollar and fifty per dozen coils. I remove the red thread from the coil and cut each one into eight lengths, which will be found suitable for any operation.

These short pieces are put to soak, so as to avoid the knotting, in case whole bunches are prepared in one piece, when it would be very injurious to the gut to try to straighten it. These pieces, when done, are coiled or kept straight, as desired, and are put away in the dry state in bottles, and they will be found to be neat, — perfectly satisfactory in their results, and always ready till used. This ligature will be found to have the following advantages: —

1. It is soft and pliable, and holds a knot.
2. It is dry and clean, without solution of oil, and, therefore,
3. Portable, without danger of soiling articles in contact.
4. It is perfectly aseptic.
5. It is always ready for use.
6. It has proved entirely satisfactory in its results.

At various times, when preparing the sutures, surgeons from different sections have been present witnessing the process of making, its use in surgery, and its results. Most were men who, not having had the best results with the kind they had at hand, were consequently more or less adverse to its use, but yet desirous of employing it if a suitable article could be found. Prof. W. J. Gillette, of Ohio, told me that in his experience and that of other Western surgeons the results had been unfavorable; the gut to be obtained being harsh, brittle, incapable of holding a knot, and otherwise unsatisfactory.

In this connection I wish to mention a few other varieties: With the alcohol or juniper-oil¹ preparations I have had very little experience. There is no need to criticise them, since they are used by many very able surgeons, doubtless with most excellent results. It would seem necessary, however, to watch them, lest in alcohol they become too hard, or in juniper oil they

¹ Eight days in aqueous sublimate solution $1/1000$, then preserved in juniper oil. — Martin, "Pathology and Therapeutics of the Diseases of Women," p. 185, American edition.

become too soft. These conditions, together with the fact that I have endeavored to discard all preservative solutions entirely, would lead me, modestly, to recommend the method herein advocated.

Since working in this field, there has come to my notice an article put up in coils and dried, said to be produced from a formula of Professor Lister. I should judge it to be an excellent thing, if only it is carefully prepared from good material. It is called sulpho-carbolized gut.

The coils I have seen have been made from an imperfect gut, and I have had no proper ones to use to test their virtues.

It has been asked: Why go through this preparatory process? Why not just as well use a raw violin string? This has been done, and no doubt can be, with good results. The violin string costs very much more, and is no better than the gut here recommended. This would be an item of some importance in case a large quantity were to be used. In case any kind of gut is employed, it is far better to prepare it in the antiseptic and tanning solution, than to bury in the tissues a gut which has been, no one knows where, bearing any possible disease germ, and with nothing done to it more than a short, probably insufficient, soaking shortly previous to its use.

It is not necessary in this paper to go into any lengthy description of the uses of catgut ligatures, as this has been ably and sufficiently done; but since this gut has produced such good results, it seems but fitting to say a few words in respect to the operations in which it has been used.

It is of greatest use and importance as a buried suture. In this place it always holds sufficiently long for union, if healing by first intention is to take place at all, becoming absorbed or organized early, and never again being heard from.

Its most frequent use as such is in abdominal surgery, operations for hernia and the perinæum; also all surgery where subcutaneous suturing is required. It can be well employed in all the cavities of the body for approximating the surfaces of mucous membrane, peritoneum, muscles or sheaths, or tissues of any organs. In abdominal surgery, it ligates bleeding points; can be used to tie off the pedicle in all cases without fear of trouble, and with any knot desired. It works admirably for the Tait knot on small pedicles, and with the shoemaker stitch on the larger ones.

In the abdominal wound it is well to unite separately, with the gut, the peritoneum, fascia of the muscles, and other tissues, so as to prevent pockets or a subsequent hernia. The deep tissues and skin are best drawn together with silk or silk-worm gut, but approximating the skin surfaces with an overcasting of fine continuous catgut. When the silk is removed the overcastings of gut will easily rub off. For uniting a skin

wound the catgut as a continuous suture is evidently not the most satisfactory. The same, however, may be said of any material if the continuous suture is used. What seems to produce the best results is interrupted silk, perhaps three to the inch, and overcast with fine gut, if necessary to approximate the edges of the skin carefully.

It can be used to great advantage in anterior colporrhaphy and at times on the cervix, but as a continuous suture for the latter it is not so satisfactory as the interrupted silk suture.

Of especial importance is its use in the restoration of the perineum. The operation is not satisfactory unless a good perineal body is formed. This cannot be done by the ordinary external suturing, but can be, and perhaps in no better way, by approximating broad surfaces by the catgut suture subcutaneously. This method was spoken of especially in the August number of the *ANNALS*.

Since it will tie and hold well, it can be used to advantage for an interrupted suture at any part, especially if there is not too much straining or maceration of the knot. There is no objection whatever to its use as a continuous suture, except that it almost invariably is drawn too tight, thereby causing more or less strangulation of the enclosed tissues, and not properly approximating the skin surfaces throughout.

Again, as to its use for the shoemaker stitch. In this it can be applied to many parts under various circumstances. Especially applicable, however, is it in three places: the intra-abdominal stump or broad pedicle, the radical operation for hernia, and extirpation of hæmorrhoids. The suture can be passed by two needles, each end threaded, or with a single needle, unthreading and threading at each puncture of the tissues. This should be drawn just tight enough to prevent hæmorrhage, but not sufficiently to produce sloughing. This might make no difference in the abdominal pedicle in which the amount of tissue beyond the ligature was very slight, nor would it often, in the operation for hæmorrhoids for the same reason; but in the hernia operation such an amount of tightening of the ligature as to stop the circulation entirely will invariably cause some sloughing, perhaps some opening of the wound, and prevent proper healing of the incision.

There is a tendency generally to use too large gut. The sizes should vary for different purposes, and should be from the smallest obtainable, perhaps .225 mm. in diameter to 1. or 1.5 mm. Seldom will a gut larger than the "E" violin string be required. It is best not to bury any more gut in the tissues than is required to promote their proper union.

Finally, adding what I learn to have been the experience of many surgeons to the mite of my own experience, it seems to me that we can

come to but one conclusion, viz.: The operator is responsible for the results of his work, consequently he should know the nature of all materials used.

If he desires animal sutures, and cannot purchase a reliable article, he should make them himself or superintend their preparation. The manufacturer cannot be the responsible party, and the use of any gut which is made simply for sale, and not conscientiously prepared, may cause the operator a great deal of anxiety after its use. It seems almost unnecessary to state that the surgeon should exercise full as much care in this regard as is usual in the preparation of instruments, sponges, etc., for intra-abdominal surgery.

282 HUNTINGTON AVE., July, 1888.

AN INTERESTING CASE OF ABORTION, FOLLOWING DEATH OF FŒTUS.

BY W. H. RASSMAN, M.D., NEW YORK.

I WAS called to see the patient, an English lady of refinement, good physique, and in seeming good general health, on the evening of June 26. She had arrived in New York from England on June 22. She stated that she was, in her opinion, judging from menstrual data, about five months pregnant, and was, she thought, threatened with a miscarriage.

She had been married eight months. There was a straightforward history of the symptoms of pregnancy, except that she had never "felt life." About one month previously, while in England, she had "carried quite a heavy package downstairs;" a few hours later she had severe pain in her pelvis and back, accompanied by hæmorrhage, which symptoms, however, subsided under treatment, without untoward results. She experienced no further trouble until a few days prior to starting for New York, when her carriage was upset while driving. She, however, escaped with slight shock, until a few days later, while aboard ship, she was again seized with pain and hæmorrhage. As before, under treatment by the ship's surgeon, these symptoms were ameliorated, but not entirely stopped. She still had intermittent pain and hæmorrhage, the former predominating, until her arrival in New York, when, the pain becoming more severe, I was called to attend her.

I found her suffering severe pain in the hypogastric region, with very slight hæmorrhage. There was also pain on micturition.

On examination of her abdomen, I found it only slightly enlarged, and concerning this she informed me that "for the last month she had been

getting appreciably smaller." I listened carefully for the fetal heart, but failed to find it.

On vaginal examination I found the uterus enlarged, heavy, anteverted, and the cervix markedly soft, but not dilated. I then diagnosed probable separation of the placenta, with death of the fetus. As the patient was in an otherwise good condition, and as the hypogastric pains and irritability of the bladder were severe, with no dilatation of the cervix, I that night contented myself with administering xv Majendie's solution hypodermically, combined with gr. $\frac{1}{100}$ atropia sulphate. The patient passed a quiet night, and the pains abated markedly, returning, however, in force and frequency the next day. They were, however, of a differing character, being sometimes the same as the day before, and then again being of a bearing-down character, located chiefly in her back. The cervix was dilated sufficiently to admit one finger, and the hæmorrhage increasing, I ordered Bonjean's ergotine, gr. xxx divided in capsules, No. vi, one every four hours.

In a few hours I was notified to call immediately, as her "womb had fallen outside."

I found on my arrival that she had a profuse hæmorrhage, and discovered, lying in the bed below the vulva, a mass consisting of a dark-red, very tough membrane, enclosing what felt like a fetal body. The cord was attached, and, on passing two fingers into the vagina, was found to be slightly adherent, but was easily detached. I also found lying entirely free in the bed a well-formed placenta, non-decomposed, and, as I said, entirely free of fetal attachment. On opening the membrane I found a fetus of about four months' development, of a light chocolate color, surrounded by a semi-liquid mass of the same color, and of the amount of about $\frac{3}{4}$ iss. the whole emitting a most horrible odor, the like of which I have never smelt, being infinitely worse than the worst fetor or cancerous exhalation I have ever met with.

I gave a thorough vaginal douche of about four per cent. carbolic acid solution, but gave no intra-uterine. Her convalescence was perfect, with no untoward symptoms, except very slight fever the day after, which disappeared under the vaginal douche.

The exertion she spoke of a month previous had probably partially separated the placenta, and with the subsequent shock, pain and hæmorrhage completed it, and caused the death of the fetus.

I report the case as interesting in the following respects:—

Firstly. There was no opening in the fetal membranes to admit air, and the odor spoken of was not apparent until they were punctured. For this reason I gave no intra-uterine douche.

Secondly. The placenta was entirely separate, the maternal surface appearing as usual in such cases, and the fetal surface as though the cord had ulcerated from its attachment. No fœtor, however, was exhaled from the placenta.

Thirdly. The repeated attacks of pain and hæmorrhage she had had without expulsion of the uterine contents, the last one being on ship-board, amid all the exigencies of ocean travel.

Lastly. The entire absence of any infection of her general constitution, or, in fact, of any untoward influence on the mother, as evidenced by her condition when I was called, and her perfect convalescence.

FÜRST. — CONCERNING SUSPECTED AND MALIGNANT ADENOMA. — *Ztsch. f. Geb. u. Gyn. Bd. xiv, H. 2.*

THE following statements represent the author's conclusions upon this subject : —

1. Adenoma uteri simplex, or simple glandular hyperplasia, in which the uterine glands are increased in number and enlarged, but still preserve their typical character in structure and as to their epithelial covering, in which, also, the interstitial tissue is compressed, though there is no evidence of extraordinary cell proliferation, must be regarded as benign. It is not advisable, however, to treat this condition by curettement, application of caustic substances, and similar means, but by incision, for the new growth tends to malignant degeneration.

2. Adenoma uteri suspectum, or destructive glandular hyperplasia, which, whether it is localized or diffuse, shows a new formation of atypical gland tubes, together with more or fewer normal glands embedded in connective tissue, which is rich in cells, which also shows an increase in the gland epithelium, and a tendency to proliferation in its lower portions, must be regarded as a suspicious condition and inclined to malignancy, even in cases in which no solid processes are demonstrable. In such cases excision will not suffice, but the uterus should be extirpated as soon as possible, the prognosis with reference to radical cure being good.

3. Adenocarcinoma uteri, in which the typical gland formations have almost entirely disappeared, and in which we find epithelial infiltration and cancer processes in a foundation which is rich in cells, is absolutely malignant in character. Even if the uterus is extirpated the prognosis as to radical cure is not good, for the chances of being able to extend the section into healthy tissue are poor; hence the treatment can be only palliative for the greater number of cases.

4. The clinical symptoms in connection with cervical adenoma are of less value in determining as to operative procedures than the result of the pathologico-anatomical examination. As early an examination as possible of an excised portion of the mucous membrane is therefore imperative.

5. Every unsuccessful attempt at treatment does more harm than good. It favors recurrences, and every recurrence means a destructive process.

CÆSAREAN OPERATION BY A PORRO'S METHOD IN A PREGNANCY IN ONE-HALF OF A DOUBLE UTERUS.¹

PROF. MAUR-SALIN, STOCKHOLM, SWEDEN.

THE patient, from Jemtland, was 22 years old, and had been married since November, 1878. Her menses, since her fifteenth year, had always been regular, continuing two or three days, and appeared every three weeks. In the middle of April, 1879, accordingly about five months after marriage, it occurred for the last time during that year. From that period her abdomen began to enlarge, and the patient considered herself pregnant. The first month she suffered from nausea and dislike for foods, but beyond this she felt perfectly well. The mammae began to enlarge. In August she felt for the first time fetal movements, which increased in force and frequency in proportion to the progressive enlargement of the abdomen. Her husband, an intelligent person, was enabled to discover these movements on different occasions. By the middle of January, 1880, *i.e.*, about the time, according to her calculation, when she had gone the full period, the belly was of the size as in a woman at the termination of pregnancy, and she now waited every day for labor to begin. The last of January she experienced labor pains, but these afterwards ceased and never returned with the same force again. She continued in her usual health until the latter part of February, when she was compelled to remain in bed owing to the very acute pains, which she thought might possibly be the commencement of labor. From her description they resembled ordinary labor pains, appearing at short intervals and of considerable intensity. After continuing a few days these ceased, and she once more found herself in good health. In the middle of March there began a hemorrhage which continued eight days, and which followed the course of an ordinary menstrual hemorrhage. At the close of this a new attack of pain supervened, which confined her to bed for eight days. The patient after this

¹ Translated from "Hygiea," by J. G. Tapper, M.D., Edin., Ill.

was able to be about and attend to her duties; the pain, however, at no time completely disappeared, but continued constantly, although less severe at intervals. At the close of April four days' hæmorrhage. Again an attack of pain after this, far more severe than the preceding one, and which compelled her to keep the bed fourteen days. No hæmorrhage during the month of May, and only occasionally a trifling pain. She imagined her abdomen had considerably decreased in size during February and March, and by close of latter month it had the same dimensions as on my first visit. She became much emaciated.

She entered Sabbathsburg hospital June 4, 1880. On day of entrance she had a temperature of 38° C. per rectum, but after this gave no evidence of fever. There appeared an inconsiderable hæmorrhage on the 6th, which continued until the 10th. She complained of intense pain, partly over region of stomach, and partly in the back, yet remained about without great effort.

Upon examination, the abdomen appeared enlarged, especially below and to the right. By palpation this enlargement was ascertained to be due to a tumor which occupied the greater portion of the abdominal cavity. It extended from symphysis pubis to within two fingers of the processus xiphoideus, and the lower portion was more prominent than the upper. To the right, it hugged the pelvic cavity, and completely filled the right hypochondrium. To the left, a person could easily force the hand between the posterior wall and the tumor. The percussion note over tumor was flat, while about, it was tympanitic. The body was round, hard, and without fluctuation. Its entire surface was smooth. Nothing was revealed by auscultation. The mobility of tumor was very limited. Examination showed the vagina to be normal. The vaginal portion was small, conical, and virginal. The external os appeared as a small, transverse opening. Uterus normal, antiflexed, movable, and pushed slightly to the left and backwards. High up in the pelvis could be felt a small, hard, rounded segment of a palpable tumor. From this, one could discover a broad pedicle, passing down to the supra-vaginal portion of cervix. The left ovary was palpable, and appeared normal, *i.e.*, there was discovered, to the left of uterus, an oval, movable body, of the form and size of a normal ovary. Examination by means of speculum revealed a normal vagina, vaginal portion, and os externum. The sound was easily introduced into the uterus $6\frac{1}{2}$ cm.

Beyond this there was nothing observable, save that numerous red-colored striæ were seen in lower portion of abdomen, and that the breasts were enlarged and contained milk. It was here found exceedingly difficult to establish a correct diagnosis. Her condition pointed to her being preg-

nant. To allow here a gravidity, it must be one of an abnormal character, because to one side of the tumor one could easily detect the uterus. We had naturally, first of all, to suspect an extra-uterine pregnancy.

Against this diagnosis were many convincing circumstances. The patient's general condition was very good. She had certainly lost in weight, yet still was quite plump, and could, without great suffering, remain about, a very great contrast to what many suffer in extra-uterine pregnancy.

The fetal tumor in an extra-uterine gravidity generally appears unsymmetrical in form, although these irregularities are difficult to outline with certainty; as nothing but the abdominal walls and the thin fetal sac covers the fetus, it is usually very easy to palpate. In this instance the tumor was perfectly symmetrical and round. Not a trace of the child, or any unevenness, could be detected in any part. It is certainly true that here five months had elapsed since gestation should have terminated, and the fetus had in all probability died, and during all this time changes in it had naturally occurred. The time was assuredly too brief for alterations of such a character as there described to have taken place.

Instead of the uterus being enlarged, as in extra-uterine gestation, it was here comparable to a normal virgin uterus. It was not closely applied to the tumor, but was distant and freely movable, by the side of which the hand could discover a pediculated structure, passing from the uterus to the tumor. No decidua had passed away.

Against the supposition of a new formation stands prominent before all else the patient's own feelings. It is undoubtedly true that women, during the period of active growth of abdominal tumors, frequently deceive themselves by suspecting pregnancy, and thus call forth these ordinary complex symptoms. The patient so clearly described her condition in such a trustworthy manner that we were compelled to give them credence; and added to this was the testimony of the husband, who informed us that he had distinctly felt fetal movements, which confirmed her statements. Without these facts, the enlargement of the mamma, with secretion of milk on pressure, as well as the appearance of fresh, red-colored striae upon the belly, which do not generally appear without pregnancy, all spoke strongly.

We were thus in doubt and could not establish a correct diagnosis, but our suspicions inclined mostly towards an extra-uterine pregnancy.

We explained to the patient the circumstances as they were, and directed attention to the very great danger attending an operation; that we could scarcely encourage such a step, but would rather discourage her. Notwithstanding all this, she declared her present condition so painful

that she accepted every risk, if the operation only offered relief should it prove successful.

On June 17, 9.45 A.M., the operation began in a detached room in the city, to which place she had removed. In the afternoon on the day previous to the operation she felt very badly; temperature 38.2° C. in rectum, pulse 100. On the morning of operation temperature 39° C., pulse 120. Nothing was observed of sufficient interest to be recorded. The operation was completed under full antiseptics. The ordinary abdominal incision was made in mesial line between symphysis and umbilicus. On extending the incision through the peritonæum a round, smooth, bluish-red tumor presented itself, which was bound to the abdominal walls by many loose adhesions.

During the time we were inspecting the tumor there oozed out through an opening, the size of a pin-hole, in the wall of the tumor, a dirty-yellow fluid. Doubtless at this place there had been a weak point, which had given way from the pressure within, as soon as the abdominal resistance had been relieved. Supposing the contents of the tumor to be of the same nature, a large ovarian trocar was introduced, but no fluid flowed out. On withdrawing the trocar a fœtal part presented itself. The opening in the wall of the tumor was then enlarged, both in an upward and downward direction, and while an assistant held the edges of the wound outside of the abdominal wall, in order to prevent, as far as possible, any of the dirty-yellow mixture which was pouring out by the side of the presenting part from flowing into the abdominal cavity, the feet of the child were sought for; whereupon the fœtus, lying with its head below and back to the left, was extracted. The cavity of the tumor was then cleansed with $2\frac{1}{2}$ per cent. sol. carbolic acid.

We afterwards endeavored to bring the tumor outside of abdomen, which was very easily accomplished. To our astonishment we then found a ligamentum latum, with a normal tube and ovary, springing from the right side of the tumor. We had therefore to deal with a double uterus, of which one-half was gravid, while the other, as we had previously determined by examination, was of normal size. Both were united by means of a short, broad, yet not particularly thick, peduncle.

We placed about the ligamentum, below the tube and ovary, several heavy catgut ligatures. We afterwards secured the peduncle, according to Prof. Nelzel's method of dealing with the pedicle in an ovariectomy. Here we also employed catgut. The tumor was then divided 5-6 cm. above the ligatures, removing with it the ovary and tube. We therefore allowed the lower, cup-shaped portion of tumor to remain. At no point in this could any opening or communication with the other uterus, or with the vagina,

be detected. The inside was everywhere covered with decidua. This was carefully dissected away, and the two surfaces, thus exposed, were united by means of a number of deep and superficial catgut sutures, in accordance with Schroder's method of dealing with the pedicles in hysterectomies. The peritoneum was cleansed with sponges and abdominal wound fully closed with catgut sutures. Lister's bandage was applied. The operation had lasted one hour and fifteen minutes. In the afternoon on day of operation temperature rose to 38.9° C. It afterwards remained between 39° and 40° until the fourth day (June 20th), when it sank to 38° , at which point it remained, with little variation, till the eleventh day (June 27), after which the patient was free from fever. She left her bed on the 31st, and on the 15th of the following month went home.

On the 14th the records show: abdominal wound entirely healed, measures 9 cm., and lower portion drawn to right side. On palpation of abdomen, there is felt a resistance in lower portion and to the right extending 2 cm. above symphysis pubis. On bimanual examination the left half of uterus is felt lying over to the left, anteflexed and freely movable. To the right of this is felt the remaining pedicle, the size of a fist, also movable and without tenderness. This, then, was the resistance which we had before detected. Recent advice from patient informs us of her continued good health.

The removed uterus had very thick walls, measuring about $\frac{1}{2}$ cm. The placenta was completely adherent upon the inside, and from the walls the membrane hung in necrotic folds. Tube and ovary were both normal. Unfortunately the specimen was lost, so that a more minute examination could not be made.

The fetus was 47.5 cm. in length; from head to umbilicus 24 cm. It was to a very high degree macerated, but showed no signs of decomposition.

Our supposition was consequently incorrect. It was certainly a case of gestation, but not extra-uterine, as supposed, but intra-uterine. Since this was clear, it was easy to explain the difference in our case and in one of an ordinary extra-uterine gestation. In this example the period of pregnancy ought to have passed by without serious difficulty or taxing the patient's strength. The fetus having died some time after full time, there had then occurred a process of absorption of the amniotic fluid, and consequently a diminishing in size of tumor, of which the patient had spoken.

The repeated attacks of pain were undoubtedly due to uterine contractions, a variety of true labor pains, wherein there was an effort to rid itself of its contents.

The uterus thus contracted more firmly about the fœtus, and by its compression caused the smooth, round tumor which was discovered by examination.

That both corpora uteri were completely separated from each other seems natural enough, since no peritoneal processes had fixed the pregnant to the free uterus.

That this one did not undergo hypertrophy, or that no decidua was developed, is nothing remarkable in this gravidity. It is certain that our literature teaches us that these changes may or may not occur.

Had we fixed our attention on the possibility that we here had to deal with a double uterus, these factors would doubtless have led us to a correct diagnosis.

From the appearance of this malformation, I think we had, presumably, a uterus bicornis simplex. The corpus uteri was fully divided, but the vaginal portion single. The right, the one gravid, was so far imperfectly developed at the supra-vaginal juncture where it united with the other half, that no communication with this or with the vagina could be found, so far as a careful examination of the remaining pedicle could determine. Unluckily several punctures were made in the mucous membrane, at the time it was dissected away, rendering it impossible to speak with certainty on this point. Undoubtedly, if any communication had existed, it gradually would have been obliterated through the efforts of labor.

How far this impermeability had existence before, or was brought about by some process of obliteration during pregnancy, is impossible to determine, although the condition of pedicle favored the first suppositions.

How fecundation was possible is very difficult to conjecture. If our surmise is correct that no communication existed through cervix, conception must have taken place by way of emigration, of which a number of reliable observations have been made.

As to the steps in the operation, everything was clearly outlined. To allow the uterus to remain was not to be thought of, as the uterine cavity had no other external opening than through the line of incision. The uterus must therefore be extirpated, and the only debatable question to consider was, should we proceed by Porro's method, using the constrictor, and permit the pedicle to remain in the wound, or proceed to ligate, as we did, and drop it within the cavity. The question of the extra or intra peritoneal treatment of the pedicle is now clearly defined in favor of the latter, that where there is a possibility this should have the preference.

Here there was no difficulty in ligating the short peduncle, and one

could easily satisfy himself against the occurrence of secondary hæmorrhage. We consequently employed a modification of Porro's procedure.

The indications for an operation which presented themselves in this case perhaps stand alone; at least I have been unable to find a similar example in any of our literature.

A CONTRIBUTION CONCERNING THE BLOOD-CYSTS OCCURRING IN THE PERITONEAL CAVITY.—*Schmidt's Jahrbücher d. in. u. ausl. Medicin. April, 1888.*

BY PROF. L. KLEINWAECHTER, PRAG.

K. REPORTS the removal of a tumor by laparotomy, the formation of which deserves particular attention. A woman of 24 years had six years ago suffered from an inflammation of the bowels, after which a tumor was found in the abdomen, for which operative removal was proposed. As the patient suffered no inconvenience from the tumor, the operation was not performed. Four years ago she married. The first confinement at the normal end of a regular pregnancy lasted thirty-six hours, but offered nothing special. At the second confinement perforation had to be performed, as the parturient canal was barred by a tumor which could not be displaced, and which was held to be a "fibroma." After parturition several severe hæmorrhages occurred, otherwise the confinement passed regularly. After a few weeks K. distinguished an exceedingly movable tumor of the size of a fist in the abdomen, which seemed to terminate at the left ovary, as it (the ovary) could not be felt.

A second examination, undertaken a few weeks later, showed the tumor to have decreased somewhat in size, and to be fixed between the uterus and the symphysis. At the laparotomy it was easily made clear by the ligation and separation of a few adhesions, and showed no pedicle. The recovery took place without interruption. The tumor, which was in weight 245 g., 10 cm. in length, and at one point $8\frac{1}{2}$ cm. in thickness, presented a smooth surface, had a hard, elastic feel, and a capsule of connective tissue which contained a brownish-red, crumb-like mass, which consisted of blood-effusions of different periods. The capsule exhibited neither epithelium nor endothelium. In one of the severed fibres of the adhesion a meshy net of connective tissue, with numerous adipose cells, could be microscopically demonstrated. The tumor proved itself to be a pure blood-cyst, which formation, according to K.'s opinion, is to be sought for

in an omental hæmatoma. The left ovary, which could not be felt before the operation, was found thereafter somewhat dislocated and fixed; it was doubtless concealed by the tumor. The formation of the omental hæmatoma remains obscure. The hæmorrhages of different periods ought to be explained thus, that new hæmorrhages have taken place into the cyst from the injuries during parturition. The later immobility of the tumor was probably due to the secondary inflammation caused by too thorough examinations of the patient. The tumor never had caused any annoyance, but its removal was indicated, as it endangered the life of the mother at the second confinement, and prevented the passage of the child until it was dismembered, and because in a repeated labor new dangers might arise.

An analogue of this case K. has not found in medical literature.

ON LATENT AND CHRONIC GONORRHŒA IN THE FEMALE SEX. — *Schmidt's Jahrbücher d. in u. ausländ. Medicin, März, 1888.*

BY DR. E. NOEGGERATH, WIESBADEN.

IN the section for Dermatology and Syphilidology at the sixtieth meeting of the German naturalists, N. gave a survey of the present state of the above question, and of the still disputed points. He first stated, that in large and middle-sized cities gonorrhœa is the most frequent disease occurring in the female sex. Its frequency is the more emphasized by gynæcologists the more the knowledge of the disease has progressed, even without proof of the presence of the gonococci, being merely based upon clinical symptoms. The presence of gonococci in chronic urethritis in the male is proved with difficulty, but still harder is their proof in the female. The absence of gonococci in the secretion of the male does not exclude the danger of contagion. The evidence of the cure of gonorrhœa is only furnished by the normal condition of the genitalia of the wife after the first months of marriage. If the genitalia of the wife offer clinical symptoms of gonorrhœa, one will be able also in the husband, in spite of apparently cured gonorrhœa, to prove by a more thorough examination, especially of the urethra, the continuance of the disease. N. does not consider gonorrhœa in the male incurable, as it was formerly thought, — brings forward new proofs of its eminently chronic course and its infectiousness in many cases, and regards the closest examination of the male

urethra as absolutely necessary if one would permit a man with persistent gonorrhœa to marry.

The diagnosis of gonorrhœa in the female with acute attacks (acute and recurrent perimetritis) is not difficult if one takes in consideration the ætiological events and also finds a salpingitis. The severe disease in childhood, recently considered by many as a sequela of acute and gonorrhœal salpingitis and peritonitis, which may be confounded with the picture of puerperal sepsis, is also so considered by N.

At the end he gives a review and a clear picture of chronic gonorrhœa in the female. Not the single symptoms, but a symptom-group most frequently found, and always repeating itself, decides surely the question whether the disease be of gonorrhœal nature or not.

A RARE ANOMALY OF THE HYMEN.

BY DR. S. KRYSINSKY, DORPAT.

IN the gynæcological examination of a girl suffering from menstrual difficulties, with leucorrhœa, I had the opportunity to observe the following anomaly of the hymen, which, as far as I know, has not been described until now. In the somewhat firm and round hymen there was down to the left a small, irregularly-shaped opening, which scarcely admitted a 5 mm. sound, and in the middle, above, a prominence about twice as large as the mentioned opening, which I, in the first moment, took for the "urethral orifice." The more careful examination showed that this prominence was formed by the duplication of the mucous membrane of the hymen, which was not unlike a semilunar valve of the aorta. From the middle of the upper free border this valve was nearly half divided. Neither at the inferior nor lateral borders, nor in the posterior wall of the small pocket formed by it, could any opening be found; so that the small pocket formed a perfectly separate blind-pouch, diminishing in diameter from above downward. The urethra, as well as one could ascertain by exploration with the sound, opened $2\frac{1}{2}$ –3 cm. behind the hymen into the vagina. The urine was passed through the opening found in the hymen; but how much this circumstance may contribute to the development, and to the obstinate continuation of the "leucorrhœa," I must leave undecided.

A more careful examination of these interesting circumstances had to be left unperformed, for certain reasons.

CONTRIBUTIONS TO LAPAROTOMY IN PERITONEAL TUBERCULOSIS. — *Schmidt's Jahrbücher d. in u. ausl. Medicin, January, 1888.*

BY PROF. FEHLING, OF BASEL.

THREE cases determined the favorable influence of exploratory incision in tuberculosis of the peritonæum. In the first case, there was a right-sided indistinctly fluctuating tumor, of the size of an apple, which had grown with concomitant emaciation of the patient (34 years of age). The character of the tumor remained uncertain. At the operation no ascites manifested itself. The supposed ovarian tumor was the cæcum covered with tubercles. The tuberculous disease extended also up on the processus vermiformis and the neighboring convolutions of the small intestines, which together formed the tumor. This was accompanied by tuberculosis of the whole abdominal cavity. The abdominal wound was closed; the course was feverless. Later on the tuberculosis made progress, but a transient improvement took place.

The second case was a female patient 24 years of age, in whose highly-distended abdomen an indistinctly fluctuating tumor, extending from the left superior spinous process obliquely up nearly to the right margin of the thorax, was to be found. It was diagnosticated with probability as a sacculated tuberculous exudate. At the laparotomy it was impossible to get into the abdominal cavity on account of the strong adhesion of the intestines to the abdominal wall. After the operation recovery took place. In the next few months the patient gained 9 kgrm. in weight.

In the third case, in a woman 25 years of age, a tumor with distinct fluctuation was also taken for a sacculated tuberculous exudate, and operated upon. The diagnosis showed itself to be correct. The sac was sewn to the edges of the abdominal wound, and a drainage-tube was introduced with its outlet in the vagina. Tubercles were demonstrated with certainty. The course of the recovery was favorable, no more ascites appeared, the patient gained in weight, and showed a good general health.

F. then draws attention to the different forms of tuberculosis of the peritonæum. In twenty-nine cases there were found twenty-one times a sacculated exudate, five times free ascites with tuberculosis of the peritonæum, three times apparent tumors, as in the first case of F. Remarkable is the rareness of this disease in the male, for, out of forty cases described, only two were males. This is probably due to the fact that

the Fallopian tubes are frequently diseased, and thus infect secondarily the peritoneum with tuberculosis.

Of the above twenty-one patients with sacculated ascites, fifteen recovered, six died; of five patients with free ascites, two recovered, two improved, one died. The diagnosis of the disease will not always be easy, if other symptoms of tuberculosis are wanting; important is the pseudo-fluctuation. The results are not to be attributed to any antiseptics applied (iodoform, corrosive sublimate), but rather to the change of pressure in the abdomen, accompanied by the effect of contact of germs from the air with the bacilli tuberculosis. Cases of spontaneous recovery have also been observed. If sacculated exudates are diagnosticated, then the broad incision and eventual drainage through the vagina are certainly to be recommended. Early recognition and removal of the tuberculous Fallopian tubes will prevent secondary infection.

REVIEWS.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. By Chas. E. Sajous, M.D., and seventy associate editors, and over two hundred corresponding editors, collaborators, etc. Complete in five volumes. Illustrated. Vol. IV. 548 pages. F. A. Davis, Publisher. Philadelphia.

THE fourth volume of this new work treats of the diseases of the uterus, menstruation and its disorders, diseases of ovaries and tubes, diseases of vagina and external genitals, diseases of pregnancy, obstetrics, puerperal diseases, dietetics of infancy and childhood, diseases of infancy and childhood, orthopædic surgery, general and experimental therapeutics.

The results of this great undertaking, which has kept the medical fraternity in a state of expectant attention for so long a time, have at last appeared, and these volumes, with their large type, excellent illustrations, convenient size, and neat appearance, are before us. Verily, it is a day of coöperation, consolidation, and condensation. It is not to be supposed that in a first attempt of this sort perfection will be attained; but that a vast amount of conscientious work has been done by the different editors is plainly to be seen. In reviewing this work it is evident that judicious selections have been made from the large number of articles written. This, of course, is the corner-stone upon which the foundation value rests.

In the able article on diseases of the uterus, by Professor Munde, with which this volume opens, we find that the work of Dr. Cushing on

the pathology of erosions, published in the first number of this Journal, is quoted with approval. Although many vexed questions are being satisfactorily settled, yet the question of the advisability of intra-uterine medication is still under dispute. Doléris and Emmet are "at sword's points," the former advocating, and the latter opposing it. It is gratifying to see the frequent allusions to the "Apostoli method," and it is to be hoped that during the next year we shall have many reports from American physicians. The usual number of instruments have been invented, among which are Reid's conical screws for dilatation, with bases varying from one-eighth to one inch in diameter, and with a thread sharp enough to take a bearing upon the wall of the cervix without cutting it. He finds them more efficient and less painful than either bougies or steel dilators. The value of the salts of manganese in amenorrhœa is quite fully discussed, but not a word is said about the general treatment. Ovariectomy and oöphorectomy receive considerable attention in an abstract of American and English papers, especially of two papers read before the British Medical Association by Dr. T. Savage and Thomas More Madden. In the article on sterility Parvin gives prominence to the general treatment and electricity. But few papers have appeared during the year on the ætiology and therapeutics of the vomiting of pregnancy.

Dr. W. L. Richardson has made a careful review of one hundred and forty-four articles pertaining to obstetrics, which is condensed into the space of forty pages. The need of thorough antisepsis is emphasized. The remarkable statement of Senn occurs in Parvin's article on puerperal diseases, that "in consequence of the general use of antiseptics in Germany there was no opportunity for the study of septicæmia."

The "Annual" certainly fills a sphere of its own. As an expanded "Index Medicus" of the choicest contributions to current medical literature, its value is unquestionable. The distinguished editor is to be congratulated on the successful accomplishment of so difficult an enterprise, and on the array of talent which is associated with him. — H. P. N.

A SYSTEM OF OBSTETRICS. By American Authors. Edited by Barton Cooke Hirst, M.D., Associate Professor of Obstetrics in the University of Pennsylvania; Obstetrician to the Philadelphia and Maternity Hospitals, etc. Vol. I. 808 pages. Illustrated with a colored plate and three hundred and nine engravings on wood. Lea Brothers & Co. Philadelphia.

THIS work, which appears as a worthy complement to the American system of Gynecology, is composed of a series of elaborate monographs by distinguished American teachers. The contents of this volume com-

prises an article from each of the following authors: The History of Obstetrics. By George J. Engelmann, M.D. The Physiology and Histology of Ovulation, Menstruation, and Fertilization: The Development of the Embryo. By H. Newell Martin, F.R.S., M.D. The Fetus: Its Development, Anomalies, Monstrosities, Diseases, and Premature Expulsion. By Barton Cooke Hirst, M.D. Pregnancy: Its Physiology, Pathology, Signs, and Differential Diagnosis. By William Wright Jaggard, A.M., M.D. The Conduct of Labor and the Management of the Puerperal State. By Samuel C. Busey, M.D. On the Mechanism of Labor, and the Treatment of Labor based on the Mechanism. By R. A. F. Penrose, M.D., LL.D. The Use of Anaesthetics in Labor. By J. C. Reeve, M.D. Anomalies of the Forces in Labor. By Theophilus Parvin, M.D., LL.D.

The first article, by Professor Engelmann, is an elaborate review of obstetrics, a subject which has long occupied the attention of this author, whose article on the obstetrical method of our American Indians and other savage or semicivilized people is well known to the profession. It is interesting and curious to follow the development of our art from ancient times, to see the opposition which beset every attempt toward improvement, the weight of prejudice, social and religious opposition, which have always inflicted persecution in this as in other arts. The author divides his subject into, first, the period of empirical or natural obstetrics; secondly, the period of scientific obstetrics,—the latter ranges from 1550 to 1888. The commencement of the second period is marked by the introduction of podalic version by the great Frenchman, Ambroise Paré, who first fully described and taught with authority the operation, which had long been foreshadowed. The second great period of difference is characterized by the introduction of the obstetrical forceps, by the Chamberlens, in 1647, from its discovery in 1647 to its improvement, in the addition of the pelvic curve, by the distinguished Levret, in 1745. The period from 1801 to 1888 the author distinguishes as the period of perfection. "The first epoch, from 1801 to 1847, is devoted to the development of the physiological study of obstetrics. The second, from 1847 to 1870, is marked by the medical description and of the use. The discovery of anaesthesia, and the discovery of the infectious nature of puerperal fever; finally, in the third and last period, from 1871 to 1888, we find the culmination of all previous efforts by the aid of antiseptic practice." The astonishing results obtained by the careful and systematic use of antiseptics would seem to mark an epoch in the history of the race.

Ophthalmia neonatorum is now practically banished from lying-in asylums, owing to the simple process of Credé. The results in diminution

of blindness is something which the coming generation will appreciate.

The author justly complains that puerperal fevers are not so completely banished from private practice as from well-conducted lying-in hospitals. The mortality in the Maternité of Paris varied from 7 to 20 per cent, now it is 1.1 per cent, while in well-regulated hospitals there will be from one to two thousand cases without a single death from sepsis.

More thorough practical teaching of our medical students in well-regulated lying-in hospitals is recommended, as the most pressing need of obstetrics in this country to-day.

[To be continued.]

HOSPITAL REPORT.

TWO CASES. — TUBERCULOSIS OF PERITONÆUM. — MULTIPLE PAPILLOMATOUS DEPOSITS ON PERITONÆUM. — REPORTED BY F. L. BURT, M.D. — MURDOCK FREE SURGICAL HOSPITAL. — SERVICE OF DR. E. W. CUSHING.

Vomiting associated with Tuberculosis of Peritonæum. — Miss H. F. is a domestic; single, age 23. She was born of Irish parentage, at Sligo, Ireland. Six years ago she became a resident of the United States, and has since resided in Chelsea, Mass. Menses appeared at about sixteen, and there has been regularity of periods ever since. Severe pain has always been associated, beginning two or three days before the flow and continuing throughout. She was a patient of Dr. A. E. McDonald, in the summer of 1886, and was referred by him to Dr. Cushing, for uncontrollable vomiting, apparently of reflex origin.

The uterus was found retroverted, and was replaced and supported by a pessary. This was in September, 1886. Later, Nov. 7, 1886, she was admitted to the Murdock Hospital. The special symptom complained of was vomiting, which, she claimed, had been of daily occurrence since she was about fourteen years of age, but was somewhat worse before coming to America. Examination showed a patient somewhat emaciated, as would be expected after suffering from such continued vomiting. Otherwise, she would have been considered phthisical, although there was no cough nor any evidence of lung trouble. The family history is unknown, but it is my impression that there was no record of

tuberculosis. It could not be made out that there was any disease of the stomach, rather that the vomiting was symptomatic of some distant disease. There was soreness and tenderness in the left iliac region, a tenderness about pelvic organs, and considerable endometritis. Nov. 11, 1888, the uterus was dilated and curetted and a plug introduced. Following this shortly, there were irregular changes in temperature, evidently not due to the operation, since this should not be followed by a rise of temperature unless there be some disease outside the uterus. Then for some weeks the temperature kept above 99° , for which no cause could be given. As to the medical treatment she had received, variety, etc., I cannot state, the condition having lasted several years and been treated by several physicians.

Perhaps it will suffice to say that nothing had been of any value whatever as directed to the symptom of vomiting. A change of food or change in the system of feeding was of only temporary benefit, a result of rest to the stomach or of less irritation to the membrane. However, she did not get any better; was haggard-looking, and suffering constantly and in a state of semistarvation. Withal, the condition was an anxious one for the patient, life not worth the living in such a state, and the position of the surgeon not a pleasant one.

An irregular, indefinite mass, probably pus tube, was found on the left side, considering which, with her other conditions, it seemed best to perform a laparotomy, which was done Jan. 25, 1887. The tubes, ovaries, and uterus were found massed together and so thoroughly adherent to the intestines as to prevent removal. This was not attempted, however, as the peritonaeum was found thickly studded with tubercles. A small piece was snipped out for examination, and the abdomen was closed after washing out with weak sublimate solution. The tubercles were found to contain bacilli on examination by Dr. Nelson, confirmed by Dr. Cushing. The recovery from the operation was good, with nothing special to note. Ten weeks later she reported that she was better; had a less painful menstruation; did not vomit if careful about her food, and had gained some strength. In the summer she returned to Ireland, and a year later, when heard from, she reported a very favorable progress.

This case is interesting to study, in connection with the now considerable number which have been reported, beginning with the case of Spencer Wells in the year 1862. An interesting article was lately published in the "Boston Medical and Surgical Journal," Aug. 9, 1888, by Dr. A. T. Cabot, in which he also refers to the other work done in this line.

Double Papilloma.—Mrs. F. is 42 years of age, resident of Cambridgeport. Has had six children and one miscarriage; a ces from four-

teen to twenty-one; all dead. Last menstruation five months ago. No menstrual pain. Has had stoppage of water from pressure. Bowels very irregular. Has been three weeks at a time without a movement. Now better because of treatment. The last pregnancy resulted in a miscarriage, and she has been sick ever since, with her present condition. Has been under the care of some physician for uterine trouble ever since marriage. Was treated by a ring for prolapsus. At the time of the miscarriage the physician wanted to turn the womb (her statement), and whatever was done, the next physician made a diagnosis of lacerated cervix. She was then told she had a fibroid growth on the cervix. A few months later a "lady doctor" diagnosed three tumors on the ovary, each about the size of a pea, and said she had medicine that would take them away. For the last five years she has been under irregular practitioners, at considerable expense and with no benefit. She entered this hospital May 14, 1888, and her condition at that time as to size, etc., is well seen in the illustration of this number (see Plate 2). The distention of the abdomen was from ascitic fluid. The ribs were very widely separated, especially noticeable after the escape of the fluid. The uterus, with the vagina, were prolapsed in a great mass, fluctuating, but revealing something solid in the pelvis. Laparotomy was performed May 17, 1888. About fifty pounds of milky fluid escaped.

There was a tumor of each ovary (papilloma) the size of a large clenched fist. These were removed, the pedicles ligated with catgut by the shoemaker stitch, which stopped a rather free oozing of blood. The bowels were seen to be completely covered with very small portions of the papillomata, impossible to remove. The abdomen was closed as quickly as possible owing to the collapsed condition of the patient. Breathing stopped and was revived by artificial respiration, and hypodermics of brandy were given. Recovered quite well, without much shock. As there was considerable hæmorrhage, a tube was introduced. The discharge was removed by suction syringe, about $\frac{3}{4}$ ss t-i-d. May 19, tube was pulled up somewhat, and a cavity containing considerable serum found. May 20, tube overflowed considerably. Bowels moved on third day. There was some vomiting for three days. Next day the temperature was 102.5° , pulse $150+$. A cavity with considerable fluid was found at about the same point of the peritonæum, and after it was freed, and washed out with sublimate, she began to pick up strength. She gained very slowly, however, never at all satisfactorily; temperature, 100° or 101° . The abdomen partially refilled, because of the constant oozing from the papillomatous deposits, and she gradually became exhausted, sinking away to death on the 9th of June, 1888.

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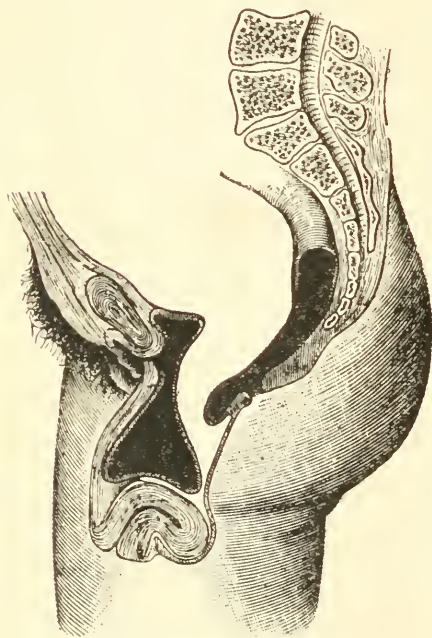


In these cases the perineum is not always torn, but it is very frequently badly stretched and unable to endure the pressure of the wall of the vagina, which pushes it down.

The connection of the various parts with each other may take a very peculiar form; thus I have once been able to detect the bladder not in front of the uterus, but above this organ, which was by no means small, and rolled up like a post-horn: a catheter passed into the bladder

could then be felt without difficulty from the rectum over the uterus through a very extensible pouch of the anterior rectal wall, which extended over the anterior wall of the uterus (Fig. 61).

Fig. 61.



Inversion of the vagina. Cystocele. Rectocele.
Prolapse of the retroflexed uterus.

The peritonæum is drawn down in a very variable degree, according to the kind of prolapse. The bottom of Douglas' pouch reaches into the prolapse below the posterior surface of the cervix; when, however, there is a striking thickening of the septum over the posterior vault of the vagina, it may lie far above the latter. In these cases the sacro-uterine ligaments may sometimes be felt as extended folds; sometimes they atrophy so that they can neither be felt nor seen, as I was able to deter-

mine in a case of extirpation of the prolapsed uterus. Similar variations occur at the anterior surface of the uterus; here, also, the bladder sometimes appears to be connected with the cervix by a large surface; sometimes it is almost entirely separated from the latter, so that it hardly touches the uterus.

When there is complete prolapse of the uterus the broad ligaments and the tubes are turned down as into a funnel. Fritsch points out, and my observations are entirely in accordance with his statement, that the displacement of the peritonæum is limited at the Linea innominata.¹

¹ Compare Fritsch, loc. cit., p. 206.

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Potatoes and one additional vegetable.
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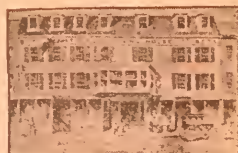
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One-half ounce of Murdock's Liquid Food.
Bread and butter or toast.
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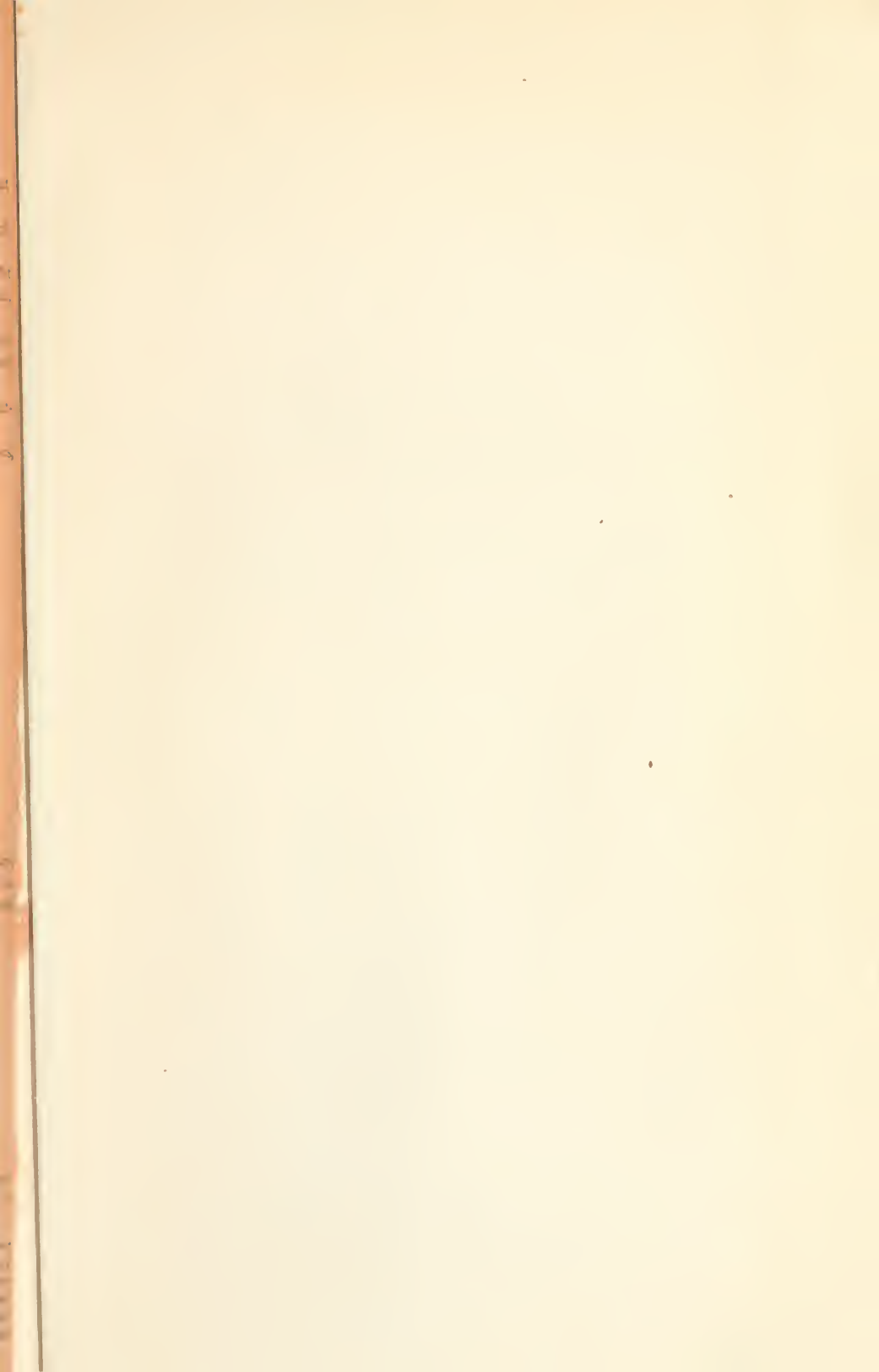


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